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**MILITARY ACQUISITIONS IN EL SALVADOR AND IN
THE UNITED STATES OF AMERICA: A COMPARATIVE
AND CRITICAL ANALYSIS**

by

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June 1999

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STATES OF AMERICA: A COMPARATIVE AND CRITICAL ANALYSIS**

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First Lieutenant, El Salvador Army
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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

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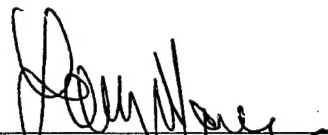
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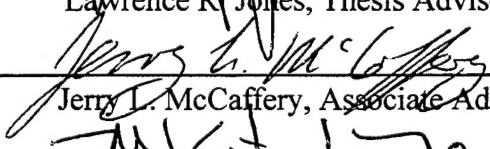


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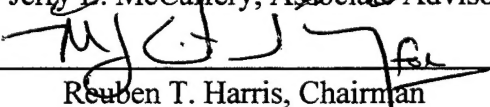
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ABSTRACT

The Salvadoran Armed Forces have to face a new environment in which resources are severely constrained. To accomplish its mission effectively and efficiently, the Salvadoran Armed Forces must use a more scientific approach to financial management. The United States Department of Defense (DoD) model for acquisitions uses an approach developed using systems engineering and, as a result, most military acquisitions satisfy an effective need. El Salvador Ministry of Defense has substantial problems in the area of acquisitions. This research can help the Salvadoran Armed Forces to develop a more effective acquisition system by providing a frame of reference that can be applied to analyze problems and to define potential solutions.

This study identifies the El Salvador Ministry of Defense need for military acquisitions and describes the current process. This research also describes the acquisition process in the US DoD, and compares the acquisition processes in both countries. Using deductive research techniques and comparative analysis, this study reveals that the military acquisition process in El Salvador can be improved by using the US DoD model as a benchmark. Finally, this study concludes on the applicability and limitations of applying the US model to reengineer the acquisition process in El Salvador.

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I. INTRODUCTION

A. BACKGROUND INFORMATION

In 1991, the El Salvadoran government and the communist guerrilla of the Farabundo Marti National Liberation Front (FMLN) signed a peace agreement that ended a twelve-year civil war. The Salvadoran armed forces had almost sixty thousand soldiers at that time, and its budget was the largest of all government agencies. As a result of the peace agreement, the armed forces had to demobilize forty-five thousand soldiers by 1995. This drastic reduction in personnel was accompanied by a budgetary reduction that brought a new spin to the way the armed forces dealt with military acquisitions. During the civil war, funding for the armed forces was the number one priority for the Salvadoran government, and the military assistance coming from the United States was high, especially during the Reagan administration. During the war, there were plenty of resources and leaders concentrated their efforts in conducting military operations without worrying about where the resources came from. After the war, money became extremely scarce, and the armed forces found themselves in a position they had not encountered in the recent past, and for which they had not planned.

After the war, managing scarce financial resources became the armed forces' main problem. It was clear that doing things the old way was not the answer. The officers recognized that in the past they had learned to waste resources. The finance office of the Ministry of Defense was pointed out as the center where mismanagement took place. This office has three main functions: it prepares the defense budget proposal for the

President, it is also a comptroller agency, and it buys everything the armed forces need. Until 1992, the personnel working in this office were involved in all three functions. The majority of employees of this office were only assistant accountants, and none of them had formal training in program management or acquisition. The finance office conducted all of their operations without computers. Under the circumstances, a complete redesign of the finance office was needed with the greatest urgency.

Reforms of the finance office have been carried out over the last seven years. As a result, each one of the functions has become independent from the other and has its own personnel. The key positions are now held by persons with more formal education, and in the near a future a Bachelor's Degree and experience in acquisitions and program management will be job requirements. Computer literacy has become a job requirement, as the office has started to become computerized.

The budgeting division and the accounting division of the finance office had little problem adjusting to the new environment, especially after the Salvadoran government provided very specific guidelines about how these activities had to be performed in every government agency. However, the acquisition division has not been able to adjust to the new environment, and the results of their actions have not been the desired ones. The acquisition division was the last to start hiring better-qualified personnel. Moreover, the people that no longer could be employed by the other two divisions because of their lack of training found new positions in this division. The acquisition division has only a few officers that work as program managers. In most cases, these officers do not have the technical expertise required to make sound decisions about specific products, and they

also lack proper advisory support. All purchases must be reviewed and approved by an acquisition board. The members of the board also have other responsibilities, and meet only when their other activities allow them to do so. One of the former members of the board explained that having outside personnel checking the acquisition division was the best way to prevent fraud in the process (Muñoz, 1999).

The acquisition division has not produced the desired results. Last year, for example, the Ministry of Defense had to return to the Ministry of Treasury almost ten-percent of the available funds because the acquisition division was not able to obligate the funds before the deadline. They also continued to buy low quality products, and ignored the feedback provided by the end-users. The best example of this is the purchase of a Taiwanese infantry rifle that did not endure even four years of peacetime use. They also purchased products without considering the standardization of the spare parts inventories. It is perplexing that an army with only six infantry brigades does not have two with the same kind of equipment. They also failed to obtain proper input from the users before purchasing materials. Last year, for example, large amounts of ammunition and explosives had to be demolished because they became unstable due to lack of proper storage conditions. The investigation revealed that the armed forces continued to buy the same quantities of ammunition they used to buy during the war for two years after the end of the conflict. It is logical and necessary to analyze why the acquisition division has not fulfilled its goals. It is logical and necessary to design control mechanisms to ensure that the acquisition division achieves its desired goals.

B. BENEFITS OF THE STUDY

The Salvadoran Armed Forces have to face a new environment in which resources are severely constrained. To accomplish its constitutional mission effectively and efficiently, the Salvadoran Armed Forces must use a more scientific approach to financial management. The US Department of Defense model for military acquisitions uses an approach developed based on systems engineering and, as a result, military acquisitions satisfy an effective need. El Salvador Ministry of Defense has substantial problems in the area of acquisitions. This research can help the Salvadoran armed forces to develop a more effective acquisition system by providing a frame of reference that can be applied to analyze problems and to define potential solutions

C. RESEARCH QUESTIONS

Primary: Can the military acquisitions process of El Salvador Ministry of Defense be improved by using the DoD acquisition model as a benchmark?

Secondary:

- Is there a need for a military acquisitions process in the El Salvador's Ministry of Defense?
- Is the current acquisition process in El Salvador effective and efficient?
- Is the DoD military acquisitions model rational, effective, efficient, and adjustable?
- Are the advantages and deficiencies of the acquisition processes in both countries determinable and comparable?
- What would be the benefits of applying the DoD model to El Salvador?

- What would be the disadvantages of applying the DoD model to El Salvador?

D. SCOPE OF THE THESIS

This thesis is an attempt to analyze the military acquisitions process in El Salvador by using the US DoD acquisition model as a benchmark. The comparison between the two models will reveal the weaknesses of the Salvadoran model. The purpose of assessing the current acquisition model in El Salvador is to help develop a more effective and efficient process.

E. METHODOLOGY

The nature of this research is deductive. I will test the hypothesis that the military acquisitions process of El Salvador's Ministry of Defense can be improved by using the DoD acquisition model as a benchmark. I will also test the feasibility of adopting the American model in El Salvador. I will address the possible outcomes of adopting the DoD model in El Salvador. The research strategies that I will use are archival research, as well as analytical research. The domain of my archival research is primary and secondary data, and the research techniques that I will use are both formal and informal. I will interview all the pertinent official and review records and literature to gain a holistic understanding of the processes.

In my analytical research, I will use a deductive approach to analyze the applicability of the American model to El Salvador. I will use both informal and formal research techniques but I will emphasize using formal techniques including flowcharting, network analysis, and decision strategy analysis.

II. THE SALVADORAN ARMED FORCES AND NATIONAL SECURITY

A. LEGAL FRAMEWORK

The mission of the armed forces of El Salvador is stated in Article 212 of the Constitution. The armed forces are specifically responsible for protecting the national sovereignty and the integrity of the national territory. Exceptionally, the armed forces are responsible for maintaining internal order and peace. They are also responsible for helping in building the national infrastructure when the President so orders, and they are responsible for helping the population in case of natural disasters. Article 211 of the Constitution of El Salvador states that the armed forces are a permanent institution dedicated to serving the nation.

The armed forces of El Salvador are part of the executive power. They are subordinated to the authority of the President who is the Commander in Chief. The President defines the structure, the legal framework, the doctrine, composition, and the activities of the armed forces. The President must provide the armed forces with the resources essential to maintain adequate levels of operational readiness and mission capability. Article 168 of the Constitution of El Salvador states that the President of El Salvador is responsible for maintaining unblemished the sovereignty of the Republic and the integrity of its territory. It also states that it is an attribution and duty of the President to organize, conduct, and maintain the armed forces. The same article states that the President must use the armed forces to accomplish his constitutional duty.

The Constitution, in Article 84, establishes the physical boundaries of the country, and states that the territory over which the Salvadoran Nation exerts sovereignty and jurisdiction cannot be reduced. This territory includes the continental land, the insular territories, the territorial waters, the ocean floor and the ocean platform in the territorial waters, and the corresponding air space.

B. EL SALVADOR: NATIONAL SECURITY, NATIONAL DEFENSE, AND NATIONAL DEVELOPMENT

National security is a condition that allows a nation to exert its sovereignty outside and inside its borders, and that provides the nation with the freedom of action that is necessary to achieve its national objectives. National security is a product of the coordinated actions of all sectors of society to eliminate or decrease the vulnerabilities of the nation. These actions take place in many different environments including socioeconomic development, law enforcement, military forces, etc. National security is difficult to achieve because it requires a delicate balance between objectives and resources in one hand, and the internal or external vulnerabilities that the nation wants to control or influence on the other hand. National security has four distinctive areas.

- Internal Security that deals with maintaining the internal order and peace.
- Economic Area that deals with establishing the basic conditions for the development of all sectors of society.
- Social Area that deals with the providing all citizens with equal opportunities and access to the fruits of development.
- External Security, that deals with maintaining the sovereignty and integrity of the territory. This area involves the use of the diplomatic function or the defense function, which is carried out by the armed forces.

National security has two interrelated components: national defense and national development. These two components complement each other because by themselves neither one of them is enough to guarantee national security. National defense provides the necessary peace and a sovereignty condition for national development, and national development provides with the resources that are needed to fund the national defense.

National defense is the collection of actions taken to maintain possession of the national resources including labor, and to maintain the freedom to use those resources. The objective of national defense is to provide conditions of external security that allow the achievement of national objectives free of external interference. The national defense is only one role, coordinated and directed by the State, and carried out by the armed forces.

The armed forces of El Salvador are organized mainly to face an external conflict, and they remain active during peacetime to prevent such conflicts from happening by exercising their dissuasive power. The armed forces of El Salvador also participate in peacekeeping operations and in the creation of cooperative ties with the neighboring nations. Also, during peacetime the armed forces participate in activities not strictly related to national defense but that contribute to the social, economic and cultural development of El Salvador. The armed forces follow instructions dictated by the military policy, which is a part of the defense policy. The military policy defines the organization, training and actualization programs of the armed forces. Military policy also defines the guidelines for the interaction between the armed forces and other

government agencies, national institutions, international civilian agencies or other armed forces when they embark in programs of national development.

The other component of national security is national development. This is a broad concept that includes economic, social, institutional, and cultural development. It is generally accepted that when a nation reaches higher levels of development, its national power also increases. Fluctuations in national power, negative or positive, have proportional effects on national security. Economic development is the most influential of all aspects of national development because its contribution is essential to satisfy any funding requirement of national security. However, all aspects of national development are responsible for the internal stability and internal order that sustain national security.

C. DEFENSE POLICY AND ITS OBJECTIVES

Every country produces defense to prevent or help resolve conflicts with other nations. Defining a defense policy requires the assumption of potential conflicts that would arise when the particular principles and objectives of a nation are in opposition to the principles and objectives of another. The national defense is generated when a nation considers its national objectives so threatened by others that it is willing to defend them. Defense is the collection of actions taken by a nation to oppose the use of force, or the threat of use of force, by other entities or nations against its essential interests.

When nations take the responsibility to defend their essential interests, including their sovereignty and their territory, they are obligated to understand the dynamics and nature of conflicts among societies. Nations are especially obligated to study those

conflicts that are potentially harmful to the people and resources that are essential for their own survival. Understanding conflicts among nations requires more than theoretical understanding, and also requires adaptation to the geographical, political and social realities of each nation. Therefore, a critical part of national defense is the identification and evaluation of the potential threat.

The fundamental objectives of the national defense policy that pertain to the armed forces of El Salvador are explicitly stated in the Constitution, and have been listed in Section A of this Chapter. Other objectives of the national defense policy affecting the armed forces not specifically stated in the Constitution are derived from international treaties and agreements geared to foster regional security and international peace. To achieve these objectives, El Salvador must have a defense policy that is not aggressive, but rather persuasive. This defense policy must be in accordance to the development level of the nation, and must balance the needs of national defense against other national needs. The defense policy of El Salvador must strive for a military force that is well-trained and equipped, that is large enough to prevent or neutralize any external threat, and that is capable to quickly repel any external aggression with minimum losses. The defense policy must be complemented by an active diplomatic policy that favors development, regional peace, and pacific conflict resolution.

1. External Threats

From a strategic perspective, the possibility of a sudden armed conflict involving El Salvador and any of its neighboring countries presently is low. This low probability is the result of an integration effort that started in 1994 during the First Summit of the

Americas that took place in Miami, Florida, USA. During this conference, the presidents of the American nations asked their defense institutions to share their ideas and experiences on topics including economic globalization, world security and international peace. In 1995, as a result of the First Summit of the Americas, the First Conference of Ministers of Defense took place in Williamsburg, Virginia, USA. During this conference the following principles were adopted as guidelines for the development of the regional security.

- Preservation of democracy is the basis for regional security.
- The essential mission of the armed forces is to support democratic sovereign nations.
- The exchange of information on military expenditure among nations must be transparent. Constant open dialogue among armed forces is required.
- All territorial disputes must be solved pacifically before the year 2005.
- The region should support UN peacekeeping operations.

Following that first conference of ministers of defense, and under the same principles, the Organization of American States sponsored several regional conferences to promote regional security and trust. The Central American nations first agreed on the Tegucigalpa Protocol, which is part of the Treaty of Central American Democratic Security. The purpose of this treaty is to develop a regional security model based on the supremacy of civilian governments over the military; a reasonable balance of military force; respect for the human being and private property; overcoming poverty through sustainable development; and the eradication of violence, corruption, impunity, drug and

arms trafficking, and environmental degradation. By the end of 1997, the governments of Guatemala, Honduras, Nicaragua and El Salvador organized the Central American Armed Forces Conference (Conferencia de Fuerzas Armadas Centroamericanas), a permanent organization that fosters military cooperation in the area.

Although regional integration is the predominant trend during the last decade, a closer look at the regional situation shows that conflicts and differences still exist among the Central American nations, and that the probability of conflict, however low, still exists. El Salvador and Honduras have had a border dispute for over 150 years¹. The border between El Salvador and Honduras was finally defined in the General Peace Treaty signed by the two countries on October 1998, in Lima, Peru. However, the final phase of the treaty has not been implemented due to disagreements on the property rights of the inhabitants of the disputed territories. In 1996, the Honduran Army mobilized a large amount of troops to the border with El Salvador, in clear violation of the terms of the peace treaty, in an effort to support their claims. In 1992, F-5 fighters of the Honduran air force flew over military installations in San Salvador and the Comalapa airport in a clear violation of the Salvadoran air space. Other violations of the Salvadoran air space by Honduran military aircraft have been reported but not confirmed.

El Salvador shares the waters of the Gulf of Fonseca with Honduras and Nicaragua in accordance to the Central American Justice Court Sentence of March 9, 1917. However, neither Honduras, nor Nicaragua is totally satisfied with the Sentence

¹ This dispute and other differences led to a 100-hour war in July 1969.

because the only navigational channel in the gulf was granted to El Salvador. Periodically, fishermen from Honduras and Nicaragua have to be escorted out Salvadoran territorial waters. The same is done by the naval forces of Nicaragua and Honduras to Salvadoran fishermen who cross the boundaries. However, there have been plenty of documented cases in which Salvadoran military vessels have exchanged small arms fire with military vessels of Honduras and Nicaragua that refused to leave the Salvadoran waters.

2. Internal Threats

Since the end of the war El Salvador has experienced the birth of an incipient democracy. However, the transition from war to peace has not been easy. The country has witnessed deep transformations within government agencies. In some cases, these transformations have contributed to the instability and disorganization that has characterized El Salvador since the end of the war. One of those transformations is the transfer of the police forces from military control to civilian control. This transfer was conducted by eliminating the old National Police (Policia Nacional) and creating the new National Civil Police (Policia Nacional Civil). Under the peace agreement's terms, one third of the National Civil Police (NCP) initial personnel had to come from the old National Police, another third had to be former guerrilla members, and the rest had to be recruited from the general public. As a result, the police force in El Salvador lacks proper training, investigative experience, and has plenty of internal friction among its members. Without a properly trained police force to enforce the law, violent crime has increased

dramatically in El Salvador, and the country has become one of the most dangerous places to live in Latin America.

The postwar problems in El Salvador are not limited to government agencies. The country's economy is also experiencing hard times despite the end of the war. The Salvadorans have to struggle to revive their economy but, the production facilities and infrastructure were so badly damaged during the war that experts have estimated that it may take some twenty years to recover what was lost during the war (FUSADES, 1993). El Salvador's economic future is hindered by high unemployment, another consequence of the war. As a result of the demobilization of fifty thousand government soldiers and an undisclosed number of guerrilla fighters, the unemployment level has reached record highs.² Demobilized combatants could not be incorporated into the fragile Salvadoran economy.

Although the government and private sector have campaigned to attract foreign investment to generate new jobs, the results of their efforts have been at best modest. The main reason for their lack of success is that the country is still unsafe. In El Salvador, crime rates have been rising since the peace agreements. A panel of experts recently hired to analyze the crime situation in El Salvador concluded that high levels of unemployment combined with the military training and fighting experience of the unemployed labor force are the driving factors behind the increasing crime rate (Steiner,

² According to the Salvadoran Foundation for Economic and Social Development (Fundacion Salvadoreña para el Desarrollo Economico y Social -FUSADES--) during the late 1980s the unemployment level ranged from 32% to 20%. During the 1990s the unemployment levels have decreased but remain at an average 10%.

1999). The study showed that in El Salvador there are 120 homicides for every 100,000 inhabitants, which puts the country in first place in homicides per capita in Latin America. According to the study the crime rate increased by 20 percent from 1995 to 1996, and increased by eight percent between 1996 and 1997. The most alarming data is that 27.5 percent of the interviewed population told criminals had victimized them during the last four years. The majority of Salvadoran criminals are demobilized combatants. These criminals are organized in bands that use military tactics and weaponry to commit kidnappings, robberies, sexual crimes and drug dealing operations. According to the same panel of experts, the NCP lacks the proper training and equipment to face the Salvadoran criminals. The experts recommended that, until specialized training becomes available, more police officers be hired to cope with the increase in criminality. The main problem in implementing the panel's recommendation is the lack of funds.

Part of the solution to the criminality problem in El Salvador involves using the armed forces in their emergency law enforcement role. Since 1992, the armed forces have deployed 2000 soldiers in operations in support of the NCP.

3. UN Peacekeeping Operations and Operations Other than War

El Salvador has a commitment to participate in UN Peacekeeping Operations. The decision to participate was made freely, and has been widely supported by all sectors of society. El Salvador has participated in de-mining operations in Kuwait, Honduras, Nicaragua, and Costa Rica. Salvadoran pilots have flown missions in the Persian Gulf, and military advisors are now providing assistance to the Guatemalan armed forces in their transition to peacetime.

El Salvador has also been actively involved in the war against illegal drugs. Although the National Civilian Police is the institution in charge of the anti-drug effort, the armed forces have cooperated with equipment and personnel report when the training or the equipment of the police forces are not adequate to counteract illegal activity. The naval force and the air force are constantly patrolling and providing the police force with the necessary intelligence to fight drug trafficking.

The armed forces also have been actively involved in the reconstruction of the infrastructure damaged during the past civil war. The involvement in operations other than war also includes environmental recovery operations, humanitarian assistance campaigns and emergency relief actions during natural disasters. However the central government has not provided special funding for operations other than war.

D. DEFENSE STRATEGY

El Salvador observes a national defense policy based on its constitution and international laws. The defense policy promotes pacific solutions to conflicts among nations, and rejects foreign intervention in matters of State. At the strategic level, the defense policy of El Salvador is fundamentally defensive, and it is based on dissuasion.

Dissuasion is the impression that a country makes on its potential rivals about the strength of its capabilities and its commitment to use the national power that prevents the potential rivals from using force against the dissuasive nation. Dissuasion is the product of an adequate balance between the national defense and the national development of a

nation, and requires the commitment and capacity to convince other nations that military power is an option if it becomes necessary to use it.

The existence of a military force that is well organized, trained and equipped, together with the commitment to use it when necessary, are essential parts of dissuasion. Although the use of military force should be reserved for defensive purposes, El Salvador is not precluded from taking the initiative against the rival. The purpose of dissuasive actions is to discourage potential rivals from interfering with national objectives as soon as possible. These actions must lead potential rivals to believe that the cost of initiating forceful actions against El Salvador would be too high. The most effective dissuasive actions are the ones that suggest that El Salvador would be victorious in any conflict against its neighbors. The best way to dissuade is to prepare to win. The main responsibility for this strategy falls on the shoulders of the armed forces, but it is also the responsibility of the government to provide them with all the equipment and personnel needed to carry out the strategy.

El Salvador defense strategy is shaped by the fact that the country has committed itself to reach its national objectives using only its national resources and the voluntary cooperation of other nations. El Salvador is not an aggressive nation and does not have a claim on the resources of the neighboring countries. Thus, the objective of the El Salvador defense strategy is to protect its people and their interests, to safeguard its political independence, and its territory.

III. EQUIPPING THE SALVADORAN ARMED FORCES

A. THE NEED FOR EQUIPMENT

El Salvador is a nation that has exercised its right to protect its sovereignty and its territory by creating, organizing, and maintaining the Salvadoran armed forces. To ensure that this institution can carry out its constitutional mission, the President must see that the armed forces have all the necessary resources and personnel. Since the end of the civil war in 1991, the budget, assigned to the Ministry of National Defense has remained at the same level, making it difficult to provide the armed forces with adequate levels of administrative, logistic, health, and maintenance support. Although the nation is enjoying peacetime and relative regional stability, it is necessary that the armed forces train their personnel constantly. It is also essential that the armed forces have the right equipment in adequate quantities to dissuade any potential threat to national objectives.

The current need for equipment is aggravated by several factors. First, El Salvador does not have adequate equipment to face the threat of external aggression.³ The majority of the military equipment in the current inventories was bought or received as donations during the civil war. This twelve year conflict brought significant changes to the military tactics used by the Salvadoran military. The guerrilla warfare tactics used during the civil war emphasized small units that were highly mobile, needed little logistic support, and had small to moderate firepower. During this period the neighboring

³ See Appendix A for a Comparison of the Military Equipment of the Central American Countries.

countries, specifically Honduras and Nicaragua, were preparing themselves for a conventional war. Their tactics and equipment are different from the ones used in El Salvador. The armed forces of El Salvador must now match the capabilities of its potential rivals (Plan de Modernizacion de la Fuerza Armada de El Salvador "Arce 2000," 1994).

The second factor that accentuates the need for equipment is the multiple sources that El Salvador has utilized to acquire military equipment. The first providers of such equipment were European nations, specifically Germany, Italy and Denmark. However, since 1947 the United States of America has been the main provider for El Salvador's military training and weapon systems. In 1977, after the administration of President Carter openly criticized El Salvador for human right violations, El Salvador rejected further military assistance from the United States. El Salvador then turned to other sources including Brazil, France and Israel to purchase modern counterinsurgency equipment for its ground and air forces. El Salvador also bought armored personnel carriers and infantry weaponry from West Germany. Yugoslavia became the source for artillery pieces. The American military assistance to El Salvador was reestablished after the guerrilla launched a military offensive in January of 1981. However, the US Congress required the Salvadorian President to certify semiannually that the Salvadoran military was improving its human rights practices, and US military assistance was withheld on several occasions. To compensate for these disruptions in the flow of equipment to the units in the field, El Salvador bought equipment from Argentina, Israel, Britain and Belgium. By the mid-1980s, West Germany was a major supplier of military

equipment. As a result of using so many different sources, standardization of equipment in the Salvadoran armed forces is almost nonexistent. The main problem with having so many different types of equipment is that providing adequate logistic and maintenance support is difficult and expensive. El Salvador, facing new financial constraints, must standardize its inventories to reduce costs. Standardization makes necessary to discard old equipment and to buy new equipment from a manageable number of sources.

El Salvador, like other developing nations, buys only mature weapon systems. Buying such systems allows savings in research, development and testing costs. However, the drawback from this practice is that systems acquired under these circumstances have a shorter useful life because when they are ready to be transferred there is a superior product already in the market. El Salvador, due to financial constraints, has also bought or received, as donations, weapon systems that are obsolete or surplus inventory in the countries of origin. This old equipment requires intensive maintenance, thus creating the need to buy spare parts, which are a component of the military acquisition.

The last factor intensifying the need for equipment is that the armed forces have been assigned new responsibilities and missions, and they need to be prepared for them. El Salvador must build up its inventories of heavy construction equipment, fire-fighting equipment and medical equipment. The country also must acquire the equipment necessary to effectively execute drug interdictions by air, land or sea.

The main objective of the organizational reform of the finance office of the Ministry of Defense is to optimize the use of the scarce resources. Within the finance

office, the acquisition division plays a key role in achieving this objective. The need for providing the armed forces with the necessary equipment implies an obligation to optimize the use of the available funds. Every player involved in military acquisitions in El Salvador must keep in mind the urgent need for equipment of the right quality and the right price.

B. REGIONAL THREAT ANALYSIS

The first step to take in a military acquisition process is to carefully evaluate the capability of the potential adversaries.⁴ In El Salvador this evaluation is conducted by two separate organizations: the National Intelligence Agency (Organismo de Inteligencia del Estado) and the military intelligence agencies, specifically the C-II of the Joint General Staff (Conjunto II del Estado Mayor Conjunto). The information processed by the C-II is collected at the brigade and military unit levels, and it is mainly military operational intelligence. The C-II forwards its intelligence analysis to the Joint Chief of Staff (Jefe del Estado Mayor Conjunto), who then forwards the information to the Ministry of Defense. The Minister of Defense then advises the President in the design of the national defense policy.

The information gathered by the National Intelligence Agency is forwarded to the National Security Council, and then shared with the Ministry of Defense. This information is used to design the national security policy, which includes the national

⁴ See Appendix B for a Comparison of Military Expenditure of the Central American countries.

defense policy. It is important to note that the National Intelligence Agency was created after the peace agreements of 1991. This agency, in accordance with the peace agreements, has only personnel with no prior involvement with intelligence agencies. The efficiency of the agency has been negatively affected by the lack of training of its personnel.

Prior to 1991, the Salvadoran armed forces had two national-level intelligence agencies: the National Directorate of Intelligence (Direccion Nacional de Inteligencia) and the C-II of the Joint General Staff. Although the Directorate was in charge of the strategic, political, and national intelligence, the demands of the civil war, and the lack of training compelled it to develop mainly military intelligence at the operational and tactical levels, duplicating the C-II's principal mission. The quality of strategic intelligence in El Salvador is questionable. It is evident that El Salvador has not yet developed a reliable source of strategic intelligence. Threat analysis is done by organizations with limited experience and not related to the armed forces.

C. FORCE STRUCTURE AND EXPENDITURE LEVELS

El Salvador's defense budgets have been traditionally modest, and the percentage of gross domestic product devoted to the armed forces has been generally conservative. Military expenditures in the post World War II period to 1970 ranged from nine to 11 percent of the national budget. The 1979-1991 civil war caused large increases in the country's defense spending in the 1980s. The defense foreign assistance to El Salvador,

especially from the United States, also peaked during the civil war.⁵ The abundance of resources allowed the armed forces of El Salvador to grow from 12,000 members in 1979 to 60,000 by the end of the 1990s.

In 1988, for territorial control, El Salvador was divided into six military zones and fourteen military regions. There was one artillery brigade, six infantry brigades, seven infantry detachments, one cavalry regiment, one engineer brigade, six special forces battalions, and one paratrooper battalion. The usual service units supported the combat forces. The air force grew to two air brigades and had two military bases. The naval force had five naval bases and a headquarters command. The national security forces were also part of the armed forces. With the end of the war, the armed forces experienced a drastic reduction in budget, and were ordered to reduce its forces to 15,000. They also were ordered to transfer control of the national security forces that in 1988 totaled 12,600 personnel among their ranks, to the National Civilian Police (Policia Nacional Civil), and to disband the special forces battalions. The reductions in personnel have not been accompanied by the corresponding closures of military bases. El Salvador has excessive military installations that require maintenance and other operational costs. The resources that the Salvadoran armed forces use to maintain their bases could be used to acquire much needed military equipment.⁶

⁵ See Appendix C for information on El Salvador Military Spending.

⁶ According to Colonel Bennet, former Chief of the C-V "Civil Military Relations" of the Joint General Staff, this is essential for armed forces of El Salvador to maintain military presence in every geographical region of El Salvador.

In 1991, the composition of the armed forces was forty five thousand combat troops and fifteen thousand persons performing administrative work (i.e., secretaries, typists, messengers, office assistants, cooks, gardeners, etc.). In 1995, the composition was eight thousand combat troops and seven thousand administrative personnel. The armed forces reduced their total personnel by seventy five percent. However, the reduction in combat troops was eighty three percent, while the reduction in administrative personnel was fifty three percent. The operational capacity of the institution decreased substantially as a result of having more personnel manning typewriters than manning weapons. In his budget proposal to the President in 1996, the Minister of Defense expressed his growing concern for lack of operational readiness within the armed forces, and asked for an increment to the defense budget. Congress turned down his request because other government agencies were thought to be higher priorities. The Defense Ministry was left with the same task, but less resources. The composition of the armed forces is a critical factor influencing the military acquisitions process. Because of its composition, the armed forces spend 70 percent of the defense budget in salaries for its personnel, leaving the remaining 30 percent to fund maintenance and military acquisitions.

There are two explanations for the uneven distribution of the reduction of personnel. First, it is more costly to separate administrative person from the armed forces than it is to separate a soldier. Administrative personnel, like officers and non-commissioned officers, are entitled to retirement benefits and severance pay. Soldiers with less than two years of service do not receive retirement benefits and only receive

severance pay. In El Salvador, the retirement benefits of the members of the armed forces are managed by the Social Prevision Institute of the Armed Forces (Instituto de Prevision Social de la Fuerza Armada), a special institution that is independent from the national social security system. The pensions and other retirement benefits are funded exclusively by the contributions of the active members of the armed forces.

The downsizing of the armed forces has had a twofold effect on the Social Prevision Institute of the Armed Forces (SPIAF) because the amount of the contributions was reduced while the outlays increased. Therefore, the downsizing of the armed forces had to be adjusted to allow SPIAF to remain solvent, which was done by separating more soldiers than administrative personnel. The second reason for the uneven reduction in personnel is that the armed forces use administrative personnel to maintain a complex and cumbersome flow of information to ensure control within the organization. The production of these documents is labor intensive, because the documents have to be produced by mechanical means.

D. THE ACQUISITION PROCESS

1. Key Players Outside the Armed Forces

a) The President

The President of El Salvador is the highest authority in matters of national defense. The Constitution empowers him with authority to decide and employ the armed forces to solve any problems related to internal and external security. The President is responsible for organizing, conducting, and maintaining the armed forces. It is the

President's constitutional duty to provide the armed forces with the resources that the institution needs to carry its missions. In theory, if the President does not provide the armed forces with the necessary resources he could face congressional censure, but such action has never occurred.

The President must also submit to Congress, through his Treasury Minister his proposed budget for approval. To accomplish this task each government agency must prepare and submit a budget proposal for the upcoming year to the Budget Directorate of the Ministry of Treasury (Direccion Nacional de Presupuesto del Ministerio de Hacienda). The budget proposals of the different agencies are then converted into the President's budget proposal.

The President and the National Security Council are responsible for the national security policy, that includes the national development and national defense policies. These policies are translated into strategies that must be carried out by the corresponding institutions. The armed forces are mainly responsible for the military part of defense policy. The President also has the assistance of a full-time presidential military staff and the Ministry of Defense to organize the national defense.

The National Security Council acts like an advisory board to the President in matters of national defense and national security. The members of the council are the President, the Vice-President, the Minister of Foreign Relations, the Minister of State, the Minister of Defense, two persons named by the President, and the Chief of the National Intelligence Agency. The council also defines the specific missions each government agency must accomplish to carry out the national security policy.

b) Congress

The Salvadoran Congress (Asamblea Legislativa) has only one chamber. It has 84 congressmen who are elected every three years. A Board of Directors (Junta Directiva), elected among its members, presides and manages the legislative work during the corresponding period. To facilitate its work, congressmen form special committees (comisiones) that handle various national interests. Article 131 of the Constitution states that the purpose of Congress is to create, modify, or abolish the Salvadoran laws. In accordance to this precept, the President's budget proposal can only become law after congressional approval, that empowers Congress with the power of the purse. The Constitution also empowers Congress to exert checks and balances on the Executive and the Judiciary powers.

The role of Congress in the budgetary process starts when the President's budget proposal is sent to the Board of Directors. The Board then communicates the proposal to the General Assembly. The proposal is then studied and analyzed by the budget committee. The budget committee approves the proposal, or recommends changes. To reach a decision, the committee has the authority to hold hearings, and anyone, including members of other committees may be called to illustrate any particular issue within the budget. Once the budget committee has reached a decision, the proposal and its amendments, if any, are sent to the General Assembly for a vote. In theory, the General Assembly could overrule the committee's decision, but this is not generally the case because the committee is a representation of the assembly's composition. If the

budget is approved by the General Assembly, it becomes a legislative decree. The decree will become law only if the President signs it and publishes it as law.⁷

The defense committee plays a limited role in the enactment of the defense budget. The purpose of this committee is to legislate in matters of military doctrine and military justice. In particular, this committee is in charge of civic-military relations and relations between the armed forces and Congress.

c) Treasury Ministry

This agency consolidates the budgets of all government agencies and especial programs into the President's budget proposal. It also oversees the execution of the enacted budget. It is also responsible for generating budgeting guidelines for all agencies, and for seeking a balanced budget.

2. Key Players Within the Armed Forces⁸

a) Minister of Defense

The mission of the Minister of Defense is to advise the President in matters related to military policy, and to communicate the orders of the President to all units of the armed forces through the Joint General Staff. The Minister is in the chain of command, and performs the President's command functions in a day to day basis. He is

⁷The Presidents receives from Congress a Legislative Decree that he can accept, modify, or veto. If the President accepts the Legislative Decree he must sign it as law and publish it in the Official Journal of the Republic (Diario Oficial de la Republica de El Salvador). See Appendix D The Congressional Budgetary Process.

⁸ See Appendix E Organizational Chart of the Armed Forces and Organizational Chart of the Ministry of Defense.

also responsible for submitting the defense budget proposal to the Ministry of Treasury. He also defines the defense budgetary policy following the guidance of the Ministry of Treasury and the advice of the Vice-Minister of Defense, the Joint Chief of Staff, and the services' Chiefs of Staff.

b) Vice-Minister of Defense

The mission of the Vice-Minister of Defense is to coordinate the technical advisory to the Minister, and fulfill the purely administrative role assigned to the Minister of Defense. He oversees and coordinates the elaboration of the defense budget proposal. The defense budget includes the budgets of the Ministry of Defense, the Inspecting General's Office, the Joint General Staff of the Armed Forces, the military services (Army, Naval Force and Air Force), and the support units. The Vice-Minister of Defense controls and oversees the development of any acquisition contract.

c) Finance Office of the Ministry of Defense

This office falls under the authority of the Vice-Minister of Defense. It executes the defense budgetary policy and prepares the defense budget proposal. The organization, and functions performed by this office correspond to the guidance provided by the National Financial Management System (Sistema de Administracion Financiera del Estado). This office is the liaison between the Treasury Department and the armed forces. They must also oversee and approve any acquisition contract. The Treasury Ministry releases funds only with the approval of the finance office.

d) Acquisition Division of the Ministry of Defense

In accordance with the Salvadoran Acquisition Law and its Reforms, this division is directly responsible for buying the goods and services needed to maintain and operate the armed forces. The mission of the division is to efficiently acquire those goods and services. The cost of the goods and services, the quality of the products, and the obligation rate at which the division uses the available funds for a fiscal year measure the efficiency of the division.

The acquisition division establishes, in close coordination with the finance office, acquisition policies that are in agreement with the defense budget. These policies are converted into acquisition objectives and strategies. The division works in close coordination with the finance office to obtain information on availability of funds, and to order payments to suppliers. The legal office of the Ministry of Defense prepares the legal contracts for the acquisition division, but the division is responsible for negotiating the contracts. Internal Control certifies the source selection process and contract administration. The Armed Forces Acquisition Committee (Comision de Compras y Control de Suministros de la Fuerza Armada de El Salvador) oversees the acquisition process, attempts to ensure competition, and to ensure that the acquisition division uses good business practices.

The functions and responsibilities of the acquisition division are defined in the [Organization Manual and Procedures of the Acquisitions Division of the El Salvador Ministry of Defense (Manual de Organizacion y Funcionamiento de la Unidad de Aprovevisionamiento y Suministros de la Defensa Nacional)].

The acquisition division has the following functions:

- Plan all acquisitions for the upcoming fiscal year;
- Develop and propose acquisition policies;
- Foster full and open competition among suppliers, except when it is not in the best interest of the national defense;
- Exclude from competition suppliers who have shown lack of professionalism, unethical behavior or negligence;
- Determine and apply the corresponding fines to suppliers who have not fulfilled their contractual obligations with the Ministry of Defense;
- Exert the warranty rights of the armed forces on all the acquired products that do not meet the contractual requirements;
- Promote standardization of the products acquired for the armed forces;
- Inform the Office of the Inspecting General of all the additions to the inventories of the armed forces.

e) Joint Chiefs of Staff

The Joint Chiefs of Staff is responsible for conducting and coordinating the army, navy, the air force and the institutional support units. The Joint Chiefs of Staff and the chiefs of staff of the three services are responsible for planning the national defense. They are also responsible for developing and updating different courses of actions against any potential threats. The Joint Chiefs of Staff recommends to the Minister of Defense the officers who should form the Military Acquisitions Committee, the finance office of the Ministry of Defense and the acquisition division.

f) C-III and C-IV of the Joint General Staff

The C-III of the Joint General Staff (Conjunto III del Estado Mayor Conjunto) is responsible for planning and executing military operations and training involving the three services. The C-IV of the Joint General Staff (Conjunto IV del Estado Mayor Conjunto) is responsible for providing all the materiel support necessary to carry out the operations planned by the C-III. The C-IV is also responsible for determining the equipment needs of the armed forces.

The C-IV of the Joint General Staff of the Armed Forces uses a bottom-up approach to define the equipment needs of the armed forces by using the input provided by the C-IV of each service. On the other hand, the C-III of the Joint General Staff incorporates the three services into the defense plans using a top-down approach. The C-III in each service must develop plans in support of the C-III of the Joint General Staff of the Armed Forces.

g) Armed Forces Acquisition Committee (AFAC)

Five military officers who are a cross-sectional sample of the officer corps form this committee. Their function is to identify which particular products best satisfy the equipment needs of the armed forces. They base their decisions on the recommendations of the C-IV of the Joint General Staff of the Armed Forces, and the advice of the acquisition division. This committee oversees the work of the acquisition division, and ensures that full and open competition occurs during the source selection process. The committee must also ensure that fraud does not occur.

3. Profile of the Acquisition Workforce

Aspiring military officers in El Salvador must complete a four-year course at the Salvadoran military academy or attend a military academy in an allied country. Until 1990, the educational focus of the Salvadoran academy was on military science. The academy imparted college level courses in many subjects, thus providing its cadets with a broad general education, but the emphasis of the academy's programs was military tactics and combat leadership. In 1991, the military academy opened programs aimed to graduate lawyers, engineers, and business administrators. Current budget constraints forced the academy to cancel the law and the engineering programs. Despite the constraints, the armed forces have numerous officers with college degrees. The majority of officers who have a college degree and are accredited professionals have continued their education upon graduation from the military academy or foreign military academies.

The armed forces of El Salvador organize their military officers in two categories: combat officers (categoria de las armas) and service support officers (categoria de los servicios). Traditionally, all officers holding a college degree were inducted, even forced, into the service support category. Officers in the service support category cannot attend basic and advanced officer courses. They cannot attend, unless a special permission is granted, the command and general staff course.

The Salvadoran law of the military profession states that those courses are promotion requirements, and the command and general staff course is indispensable to hold a command position in a tactical unit. To get promoted and in lieu of the promotion courses, service support officers must submit professional research in their professional

field to an evaluation board. Combat officers generally resent that service support officers have promotion requirements that require less time to complete, and regard the promotions of the service support officers as facts of little merit. The law establishes that within the same year group the combat arms officers will outrank the service support officers. The same law precludes service support officers from certain command positions in the armed forces high command. Until 1992, service support officers could not be promoted to general. Service support officers draw higher salaries than their combat arms peers to compensate for the inequalities between the two officer categories. However, monetary compensation is not always enough to compensate for the disdain and the apathy that combat arms officers show for their service support comrades.

A service support officer must command the acquisition division, in accordance with its organizational statutes. The officers working as program managers must have a college degree in business management or a similar major. It is not required that program managers be service support officers. However, the job requirements do not describe the profile of a combat arms officer. Program manager positions are open to civilian personnel, but a civilian has never been hired for such a job. Besides their college education, none of the program managers have special training in military acquisition. All program managers must receive a preparatory course in the National Financial Management System, but they do not receive a certification, which is normally the case for other government agencies. The professional differences between combat arms officers and service support officer set limitations in the performance of the acquisition division. Other key players in the military acquisitions process, like the Joint Chief of

Staff and the members of the Armed Forces Acquisitions Committee, are combat arms officers who consistently regard the professional opinion of the program managers as incongruent with the real needs of the armed forces.

The majority of the subordinate personnel at the acquisition division do not have a college education. However, the new recruits for the division must have it. Computer literacy is at a minimum within the division, and that is also a systemic problem throughout the armed forces. Computer literacy is now a job requirement for new employees.

The acquisition division is also understaffed. To assist the AFAC in selecting specific products, the acquisition division must form and coordinate committees of end-users.

4. Program Management

The military acquisition process starts with the definition of mission requirements. The threat to El Salvador is analyzed by the intelligence agencies and forwarded to the National Security Council. The Minister of Defense and other members of the council advise the President in the design of a national security policy that includes the military policy. Military policy is the responsibility of the armed forces. The high command of the armed forces is responsible for establishing objectives for the military policy, and taking actions to achieve those objectives.

The C-III of the Joint General Staff of the Armed Forces plans all the operations and training necessary to achieve the objectives of the military policy. The C-III also evaluates the results of the completed operations and training. The C-IV of the Joint

General Staff of the Armed Forces must ensure that the armed forces have all the materiel needed to conduct operations and training. The C-IV must evaluate the current and future availability of materiel. It must also define, based on the needs analysis, which equipment is the best suited to accomplish the plans of the C-III, and must also forward a requirement list. The C-IV defines the acquisition strategy by choosing between system upgrades or the purchase of new equipment. The requirement list, which normally has several alternatives by this point in the process identified by manufacturer's name, is forwarded to the Chairman of the Joint Chief of Staff who signs it and sends it to the Ministry of Defense.⁹ The Minister of Defense and the Vice-Minister review the requirement list, and send it to the AFAC and to the acquisition division.

The AFAC and the acquisition division then must start the source selection process. The acquisition division prepares a request for proposals that must be publicized. The role of AFAC is to ensure full and open competition except when competition is not in the best interests of the nation.

Once proposals are received, they must be evaluated. The evaluation of proposals includes checking for compliance with the end-user requirements, overall quality, price and other contractual conditions. The armed forces of El Salvador do not have testing and evaluation facilities, and the evaluation of alternatives is done through the advice of experts, end-user's input, and other empirical testing and evaluation techniques.

⁹ The requirement list identifies by brand name the alternatives when the requirement is a high value weapon system. When the system is not a high value item, the requirement list only identifies the desired characteristics of the system.

Although the acquisition division claims that they select products based on their overall quality and not only their price, it is price the factor that seems to drive their decisions. The armed forces of El Salvador cannot judge the performance or the adequacy of any military system because of the lack of testing facilities of their own. The procuring major military systems, the acquisition division and the AFAC receive from the C-IV a requirement list that has products already identified by brand name. The AFAC and the division must trust that these products will fit the needs of the armed forces, perform the intended function, and be compatible with existing resources. The armed forces of El Salvador do not evaluate the impact of its military equipment on the environment because currently the law does not require such testing. Congress will pass legislation that will demand testing on the environmental impact of the equipment purchased by government agencies. It is not yet decided what agency will conduct the environmental impact analysis, but it is likely that the acquisition division will partake in the environmental evaluation of the equipment (Martinez, 1999).

Once the source of the equipment is selected, the acquisitions division, with the support of the legal office, initiates a negotiation process with the source of the equipment. The acquisition division must verify with the budget division whether there are sufficient funds to purchase the items or systems. Once favorable conditions have been established, and if the available funds are sufficient, the contract can be awarded. In the event that the available funds are not sufficient, the acquisition division must notify the Minister of Defense. The Minister informs the President about the lack of funding, and requests of the President a multiyear procurement plan. The President must submit to

Congress the request for a multiyear procurement plan, because only Congress can approve this type of procurement plan. If Congress approves and the President authorizes multiyear procurement, the acquisition division can award the contract to the supplier.

The acquisition division performs contract management activities. When the product is received by the end user it must be inspected to ensure that the product is what was ordered and to ensure that it is in proper functioning condition. If the product does not meet any of the requirements, the acquisition division must contact the supplier and seek a solution to the problem. If the supplier does not solve the problem, then the legal office takes over the contract. If there are no problems with the product, the acquisition division requests the budget division to initiate payments and close out procedures. If all contractual conditions are satisfied, the finance office of the Ministry of Defense has to request of the Ministry of Treasury authorization to make payments to suppliers. Once the authorization is granted, the finance office can transfer the funds to the supplier.

In this Chapter, I described the acquisition process in El Salvador including the key players in the process, the program management structure, and the acquisition workforce. In Chapter IV, I will analyze the acquisition process in the United States including the historical development of the process, the key players in the process, the program management structure, and the acquisition workforce.

IV. THE US DEPARTMENT OF DEFENSE ACQUISITION PROCESS

A. HISTORICAL DEVELOPMENT OF THE PROCESS

1. 1940s Period

Systems acquisition was not always as complicated as it is now. Back in 1947, when the Department of Defense (DoD) was first formed, systems acquisition was a straight forward, simple process that could be compared to something like the automobile industry. The emphasis was on simplicity, reliability, and producibility. The DoD lacked any formal authority to control the acquisitions process, having been designed to be a loose confederation of the three military departments that was designed to provide loose guidance to each department. After World War II, there was a decline in defense business, which reversed as the United States entered the Korean conflict. (Przemieniecki, 1993)

2. 1950s Period

Throughout the 1950s the individual services generally ran their own acquisition programs with little interference by the Secretary of Defense, with each service buying the weapon systems it felt were suitable for the conflicts each envisioned. Defense budgets increased after the Korean conflict as a result of an increased international military role, presenting the challenges of efficiently managing the first peacetime defense industry in the United States history and effectively coordinating military research and development efforts. (Przemieniecki, 1993)

This was an era of cost-reimbursement contracts for both development and production. The emphasis moved from an industry like the automobile industry to an industry that was more custom design and development, where contracting played a major role. This type of emphasis continues today. The trend was towards high technology, with little emphasis on "should-cost", "design-to-cost", or "life-cycle-cost." Production costs did not pose a major constrain in engineering design, and when designs became impractical, they were modified in accordance to government funded engineering changes. (Przemieniecki, 1993)

It was during this period that program management organizations were born out of the need to manage the increasing complexities found in the acquisition programs, and the desire to smoothly transition acquisition efforts from development to production. The program management strategy was first used on the intercontinental ballistic missile program, and helped to push the industry to increased engineering specialization and developmental concurrency, bringing about the need for systems engineering. The Department of Defense Reorganization Act of 1958 laid the groundwork for the acquisition management structure that we know today, authorizing the Secretary of Defense to assign the development, production, and operational use of weapon systems to any military department or service. (Przemieniecki, 1993)

3. 1960s Period

The Department of Defense Reorganization Act of 1958 was not fully executed until 1961 when Robert McNamara became the Secretary of Defense. He brought about to the acquisition environment many of the fundamental concepts in the process.

Initiatives that have persisted include: the planning, programming, and budgeting system (PPBS); integrated logistics support planning; increased competition; network planning and scheduling; incentive contracting; source selection and proposal evaluation procedures; improved quality assurance; information systems; value engineering; technical data management; configuration management; the work breakdown structure; and defense standardization. McNamara also championed the use of more paper studies, versus system prototyping, in the early acquisition phases as a cost saving measure. (Przemieniecki, 1993)

During this period, top-down management was normal practice within DoD and control became more centralized, contracts became more fixed price and incentive instead of cost reimbursement in response to the large cost overruns of the 1950s (Przemieniecki, 1993).

4. 1970s Period

The next era in acquisition history started in 1968 with a new Deputy Secretary of Defense, David Packard who believed in decentralized control of acquisition programs, although he still felt DoD involvement was necessary in major decisions. Packard instituted the Decision Coordinating Paper, now known as the Integrated Program Summary (IPS), to maintain DoD involvement. Packard also established the Defense Acquisition Review Council, which is now known as the Defense Acquisition Board, to advise him of the status of any program prior to the program entering a new phase of development. The Cost Analysis Improvement Group was established by Packard to provide DoD with cost estimates that were independent of the program office, and to determine uniform cost estimation standards. (Przemieniecki, 1993)

Packard initiated DoD Directive 5000.1, entitled "Acquisition of Major Defense Systems." This directive states that successful development, production, and development of major defense systems are primarily dependent on competent people, rational priorities, and clearly defined responsibilities (Przemieniecki, 1993). Another

Packard initiative was the push for more hardware prototyping, which replaced McNamara's paper studies, arguing that money spent in early hardware prototyping and testing would reap cost saving in improved contractor selection. Based on the large contract overruns under McNamara, Packard moved DoD back towards cost reimbursement and incentive contracting. (Przemieniecki, 1993)

Other initiatives of this era included the publication in 1976 of the Office of Management and Budget Circular A-109, entitled "Acquisition of Major Systems." This circular emphasized competition and the need for each department to perform mission area analyses to determine their needs throughout the entire acquisition process (Przemieniecki, 1993).

5. 1980s Period

The Reagan administration advocated and achieved a large defense build up. Secretary of Defense Caspar Weinberger and Deputy Secretary of Defense Frank Carlucci believed in a controlled, decentralized acquisition process. Carlucci developed many initiatives to streamline defense acquisitions, with some of the more notable being: multiyear procurement; greater competition in contracting; stabilized budgets; realistic budgeting; and a move back to fixed price contracts to help control contract overruns. (Przemieniecki, 1993)

Problems with several major defense programs, and inadequate reporting of those problems, prompted Congress to exert close scrutiny and micromanagement of the defense acquisition process. Problems like the B-1 bomber and perceived spare parts overpricing lead to the creation in 1986 of a blue ribbon panel chaired by David Packard,

which became known as the Packard Commission, to help solve the problems that DoD was experiencing. The commission found that the public believed that as much as half of the defense budget was lost to waste and fraud. The public also believed that as much money was lost on fraud as it was on mismanagement; and that the problems in waste and fraud in the defense spending were very serious national problems of major proportion (Przemieniecki, 1993). The Packard Commission findings indicated that the acquisition process was not effectively managed, and they proposed four recommendations to help solve the problem.

The first recommendation was to create a new Under Secretary of Defense for Acquisitions [USD(A)] who would be in charge of procurement, research and development, and test and evaluation for all weapon systems. The second recommendation was to create acquisition executives in each component that reported directly to new USD(A) as well as their Service secretary. The third recommendation was to create Program Executive Officers (PEO) who would oversee specified programs within each service and report to the Component Acquisition Executive. The final recommendation was to use the Vice Chairman of the Joint Chiefs of Staff as the chairman of the joint requirement management board to establish requirements for new systems, and to help prevent overlapping of system development between the services. (Przemieniecki, 1993)

At the same time that the Packard Commission was operating, Congress passed the Goldwater-Nichols Defense Reorganization Act of 1986. This was intended to empower the role of the Joint Chief of Staff, to trim headquarters staff, and to provide

more inter-service coordination for defense. Little progress was made with either the Packard Commission or the Golwater-Nichols initiatives until the Defense Management Review of 1989. The Defense Management Review basically agreed to implement the recommendations from both the Packard Commission and the Goldwater-Nichols Act. (Przemieniecki, 1993)

6. 1990s Period

The effects of the Defense Management Review are evident now. Many of the headquarters staffs have been reduced and commands have been restructured or combined. The structure that was recommended by the Packard Commission is now functioning. The DoD Directive 5000.1 "Defense Acquisition" was updated and released in February 1991. Two companion documents: the DoD Instruction 5000.2 "Defense Management Policies and Procedures" and DoD Manual 5000.2-M "Defense Acquisition Management Documentation and Reports" complement the procedural framework of the acquisition process. (Przemieniecki, 1993)

The acquisition process has moved back to cost type contracting due to continued cost and schedule overruns. Congress will continue micromanaging, especially on the light of the current Defense reductions. In addition, through the enactment of the National Defense Authorization Act for Fiscal Year 1991 and the Defense Acquisition Workforce Improvement Act (DAWIA), Congress has mandated professionalism in the Acquisition Corps. (Przemieniecki, 1993)

B. KEY PLAYERS AND THEIR ROLES

1. Key Players Outside the Armed Forces

a) The President

The President of the United States is also the Commander in Chief of the Armed Forces. The President is responsible for creating, with the advice of his Secretary of Defense and the Chairman of the Joint Chiefs of Staff, the National Military Strategy. The process used to formulate the National Military Strategy is determined by the Goldwater-Nichols Department of Defense Reorganization Act of 1986, which clarified the roles and responsibilities of the military services in support of the Secretary of Defense (Przemieniecki, 1993). The Act establishes a policy of increased attention to the formulation of strategy and contingency planning to ensure that strategy and contingency planning are linked to National Security Strategy, Policies and Objectives.

b) The National Security Council

The National Security Council is an advisory organization to the President. The NSC and the National Command Authorities (defined as the President and the Secretary of Defense) analyze the information about the threat gathered by the intelligence agencies. Based on their analysis they formulate the National Security Strategy, and integrate the domestic, foreign, and military policies related to that strategy.

c) US Congress

Congress affects the DoD acquisition process through the budget enactment process. Enactment consists of two things, authorizations and appropriations;

both of them are needed to execute a program. After receiving the President's budget, Congress is supposed to draft a Concurrent Budget Resolution that sets federal spending and revenue targets, or limits, for the upcoming fiscal year. The Concurrent Budget Resolution is often called the "Congressional Budget" to contrast it with the budget proposed by the President (Przemieniecki, 1993).

An authorization is the congressional authority to carry out a particular program within the specified restrictions. Congress gives authorization to purchase goods and services for the DoD assuming funding is appropriate. There are two authorization bills that have to be approved by the Senate Armed Services Committee (SASC) and the House Armed Services Committee (HASC): the Defense Authorization Bill and the Military Construction Authorization Bill. These two bills should reflect the overall spending limits set in the Concurrent Budget Resolution¹⁰. (Przemieniecki, 1993)

Appropriations are permission to obligate the Treasury to pay for goods and services provided to the DoD. The Appropriation Bill passed by Congress authorizes the obligation and subsequent outlay of dollar amounts for specific purposes. The Senate Appropriations Committee (SAC) and the House Appropriation Committee (HAC) have to draft two bills: the Defense Appropriation Bill and the Military Construction Appropriation Bill. These two bills should reflect dollar amounts equal or less than the dollar amounts shown in the authorization bills. The DoD receives annually

¹⁰ These two bills should reflect the overall spending limits set in the Concurrent Budget Resolution but often they do not. In addition, before they are completed, the appropriation process is well under way.

approximately 85 appropriations, that fall in five broad categories: Military Personnel; Operations and Maintenance; Procurement; Military Construction; and Research and Development, Test and Evaluation.

Congressional inquiries about the status of acquisition programs are common. The Selected Acquisition Report is used to report annually to Congress on the status of major acquisition programs.¹¹

d) General Accounting Office (GAO)

The General Accounting Office is Congress's investigative branch. The GAO makes inquiries into programs for various reasons, but especially they concentrate on the proper use of government funds and proper bookkeeping and financial records. Normally, the GAO will be looking for a particular financial control issue and will conduct audits to find the information related to it.

2. Key Players Within the Armed Forces

a) The Secretary of Defense

The Secretary of Defense is a major player in the development of the National Military Strategy. The Secretary publishes several documents that translate the national security objectives and strategies into national military objectives and strategies. The Secretary of Defense publishes the Defense Planning Guidance (DPG), used by the

¹¹ The Selected Acquisition Report is not the only document used to report to Congress on the status of major acquisition programs. DoD Instruction 5000.2 provides a complete listing of all the documents used to report to Congress on the status of the acquisition process.

unified and specified commands to develop required plans and provide assessment of the capabilities to execute national military objectives and strategies.

b) The Under Secretary of Defense for Acquisitions [USD(A)]

The Under Secretary of Defense for Acquisitions has been designated the Defense Acquisition Executive (DAE).

According to the Secretary of Defense's 1991 Annual Report to the President and Congress, the DAE is ultimately responsible for acquisitions within the DoD, having the authority for approving major defense programs at major milestones in the acquisition process, for directing the heads of the DoD components on all acquisition matters, and for directing the comptroller to withhold funds, if necessary, to ensure program milestone criteria are met. (Przemieniecki, 1993)

c) Chairman of the Joint Chiefs of Staff

The Chairman must advise the Secretary of Defense on the priorities of the requirements identified by the commanders of the unified and specified combatant commands. Furthermore, the Chairman is directed to periodically (not less than biennially) review the combatant commands in terms of missions, responsibilities and force structure, and recommend changes. (Przemieniecki, 1993)

The Chairman of the Joint Chiefs of Staff publishes the National Military Strategy Report, which forms the basis for identification of missions, objectives, and tasks for the military, and subsequent mission area assessments and mission need statements, which are the first steps in the acquisition process for defense systems. (Przemieniecki, 1993)

d) *Joint Requirement Oversight Council (JROC)*

The Joint Requirement Oversight Council is an organization proposed by the Packard Commission. The Vice-Chairman of the Joint Chiefs of Staff chairs the JROC. Membership is composed of all the Vice Chiefs of Staff of all the Services. The responsibilities of the JROC are the following: validating the Mission Need Statements, prioritizing the Mission Need Statements, and reviewing programs approaching milestone reviews. In validating the Mission Need Statements, the JROC is also looking for non-materiel solutions to the need, where there is a possibility of a joint program to meet the needs of several services, or where the need might be satisfied through a comparable allied effort (Przemieniecki, 1993).

e) *Defense Acquisition Board (DAB)*

The Defense Acquisition Board is chaired by the Under Secretary of Defense for Acquisition. The Vice-Chairman of the Joint Chiefs of Staff is the vice chair. Membership is composed by the various Component Acquisition Executives, the Defense Comptroller, the Assistant Secretary of Defense for Program Analysis and Evaluation, the Director of Defense Research and Engineering, the Director of Operational Test and Evaluation, and the various acquisition committee chairs in the DoD. Their job is to review the Integrated Program Summaries (IPSS) and write Integrated Program Assessments (IPAs), review major programs as they approach decision milestones, and to recommend whether or not they should enter the next phase in the acquisition process. The DAB does not provide funds, or vote on the outcome of a program; rather they make

recommendations to the DAE for his decisions. The DAB recommendation is documented in the draft Acquisition Decision Memorandum, that is then approved or disapproved by the DAE. (Przemieniecki, 1993)

f) Component Acquisition Executive (CAE)

The Component Acquisition Executive is an assistant secretary with full-time responsibilities for all service acquisition programs. The CAE, although in the staff of the Service Secretary, is solely responsible to the Defense Acquisition Executive (DAE) for all service acquisition matters.

g) Program Executive Officer (PEO)

Program Executive Officers are the key middle level managers tasked with direct accountability for the execution and information validation of a limited group of mission related major acquisition programs (Przemieniecki, 1993). The PEO positions were established as the command lines between the Component Acquisition Executive and the Program Managers for major acquisition programs

h) Program Manager (PM)

Program Managers are the individuals responsible for development and delivery schedules, and ensuring weapon systems perform as required. The PM is responsible for the program in terms of costs, schedule, technical performance, and supportability. They are also responsible for developing an acquisition strategy, planning the program by developing a management approach, providing budgetary estimates and alternatives, developing contract strategies, and conducting the day to day management of

the programs. Program Managers are not advocates for specific programs; that is the responsibility of the service chiefs and operating command. (Przemieniecki, 1993)

C. LIFE CYCLE MANAGEMENT

The acquisition process provides a logical means to progressively translate broadly stated mission needs into well-defined systems requirements. The acquisition process can be divided in two areas: the preparatory area and the formal acquisition area. The preparatory area of the acquisition process consists of the Requirement Definition Process and the Concept Exploration and Definition Phase of the acquisition process. The division of the process into these two areas is not meant to imply that one is more important than the other. In reality, if the preparatory activities are not properly accomplished, there will be numerous complications during the formal part of the process. The Concept Exploration and Definition Phase is normally considered part of the process, however, the process is normally established until Milestone I. The end of the Concept Exploration is the first time that alternative concepts are identified well enough to allow development and scrutiny.

The Requirements Definition process precedes the Milestone 0 decision. It begins with an examination of the operational need that leads to the tradeoffs in costs, schedule, and performance to determine the optimum systems characteristics in later phases of the life cycle. Operational needs are generated from four process activities: mission analysis, changes in military policy, cost reduction, and taking advantage of a technological opportunity (Przemieniecki, 1993)

Any, or all, of these activities can result in a Major Command preparing a Mission Need Statement (MNS). The MNS states the need in very broad operational terms so the

developers are not locked into a single solution. The MNS, once completed, is sent to the Joint Requirement Oversight Council (JROC) if it appears that the potential solution will require the initialization of a new acquisition project.

The JROC validates the MNS, and assigns it a priority. Every year, the JROC validated MNSs are sent to the Defense Acquisition Board (DAB) for consideration and evaluation. The DAB will determine if the need is based on a validated threat, if the need cannot be satisfied by a non-materiel solution, and if the need is sufficiently important to warrant funding. If after reviewing the requirement, the DAB and the USD(A) concur in its validity, the USD(A) issues an Acquisition Decision Memorandum (ADM). This ADM is sent to the Service office responsible for acquisition, and the formal acquisition process is to start.

The formal acquisition area consists of the Demonstration and Validation Phase, the Engineering and Manufacturing Phase, the Production and Deployment Phase, and the Operations and Support Phase. The formal acquisition area will be analyzed in greater detail in the following section of this Chapter.

D. PROGRAM STRUCTURE

Program structure defines the phases and milestone decision points established for a program. Phases and milestones facilitate the translation of broadly stated mission needs into system specific performance requirements and a stable design that can be produced efficiently. The program structure is fundamental in the development of a program acquisition strategy. (Defense Acquisition Deskbook, 1998)

The PM is responsible for designing a program structure that makes sense for individual programs. However, the vast majority of major programs can be carried out using four models: traditional, grand design, incremental, and evolutionary (Defense Acquisition Deskbook, 1998). The traditional model represents the DoD's typical approach to major acquisition programs, shown in Figure 1.¹²

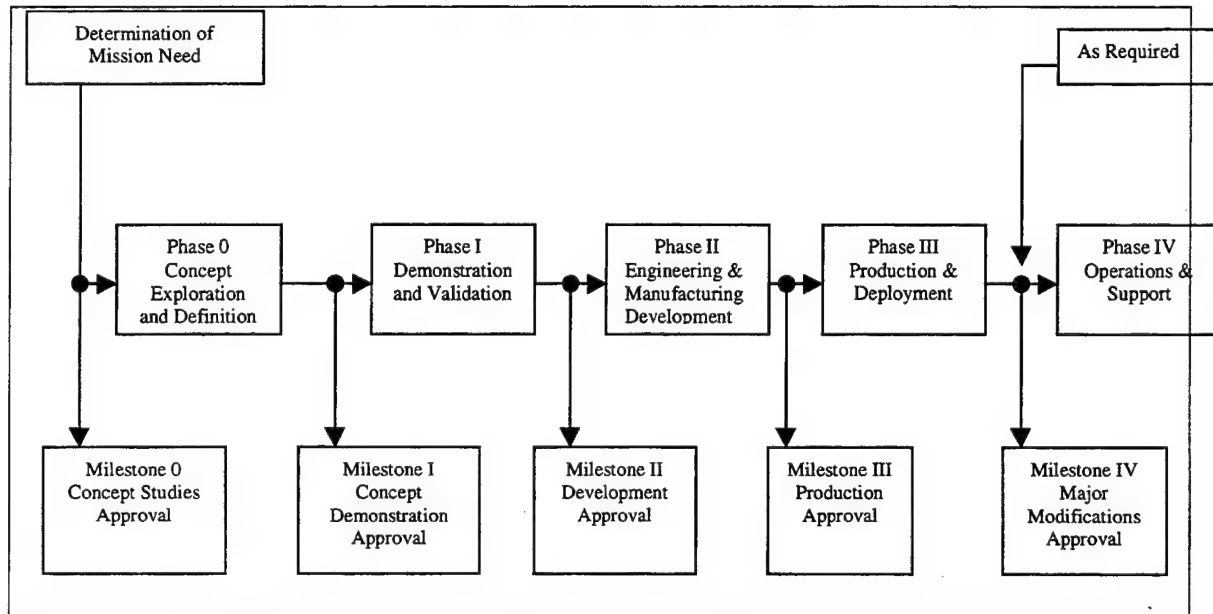


Figure 1. The Traditional Four Milestone Program Structure

1. Phase 0 – Concept Exploration and Definition

During Phase 0, the following should normally be done:

- Creation of validated assessment of the military threat*
- Consideration of technology (10 USC 2364) and technical risk
- Assessment of advantages and disadvantages of each alternative concept

¹² For a summary of the “traditional” acquisition program structure see Appendix F.

- Identification of an acquisition strategy
- Identification of cost, schedule, and performance for approval (10 USC 2435)
- Identification of potential environmental consequences (42 USC 4321-43)*
- Identification of program specific accomplishments to be completed during the next phase
- Analysis of any major technology and industrial capability issues (10 USC 2440)*
- Identification of cooperative opportunities (10 USC 2350a)*
- Ensuring compliance with international arms control agreements*
- Creation of a proposed oversight and review strategy to include a description of mandatory program information and when this information needs to be submitted for the next milestone decision
- Development of the system requirement in terms of measures of effectiveness (MOE), measures of performance (MOP), and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) support requirement (see DoD 5000.2-R, Part 2.2.1.)

* Normally not applicable to ACAT IA programs

Source: DoDD 5000.1, Para C.2 and DoD 5000.2-R, Part 1.4.2

2. Phase I – Demonstration and Validation

During Phase I, the following should normally be done:

- Creation of updated assessment of the military threat*
- Consideration of technology (10 USC 2364) and technical risk
- Refinement of cost objectives and affordability assessment
- Identification of major cost, schedule, and performance tradeoff opportunities

- Refinement of acquisition strategy and determination of initial low rate initial production quantities (10 USC 2400)*
- Identification of a test and evaluation strategy and appropriate testing (10 USC 2366 and 10 USC 2399)
- Assessment of the industrial capability to support the program (10 USC 2400)*
- Identification of proposed cost, schedule, and performance objectives and thresholds for approval (10 USC 2435)
- Assessment of potential environmental impacts (42 USC 4321-43)*
- Verification that adequate resources have been programmed to support production, deployment, and support
- Identification of cooperative opportunities (10 USC 2350.(e))*
- Ensuring of compliance with international arms control agreements*
- Creation of a proposed oversight and review strategy to include a description of mandatory program information and when this information needs to be submitted for the next milestone
- Refinement of CAIV objectives
- Analysis of any major technology and industrial capability issues (10 USC 2440)
- Creation of Independent Cost Estimate (ICE) and Manpower Estimate (10 USC 2434)
- Refinement of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) support requirements (see DoD 5000.2-R, Part 2.2.1)

* Normally not applicable to ACAT IA programs

Source: DoDD 5000.1, Para C.2 and DoD 5000.2-R, Part 1.4.3

3. Phase II – Engineering and Manufacturing Development

During Phase II the following should normally be done:

- Achievement of design stability
- Consideration of technology (10 USC 2364) and technical risk
- Design, coding, integration, and testing of software
- Creation of updated assessment of the military threat*
- Creation of an updated test program with required lethality and survivability testing (10 USC 2366)*
- Production of IOT&E results that realistically portray operational performance (10 USC 2399)
- Identification of a refined acquisition strategy to include support concept
- Creation of a refined program cost estimate, independent cost estimate, cost objectives and Manpower Estimate (10 USC 2434)
- Creation of an updated affordability assessment
- Assessment of the technological and industrial capability to support the program (10 USC 2440)*
- Identification of proposed cost, schedule, and performance objectives and thresholds for approval (10 USC 2435)
- Assessment of potential environmental impacts (42 USC 4321-43)*
- Verification that adequate resources have been programmed to support production, deployment, and support
- Identification of cooperative opportunities (10 USC 2350a(e))*
- Ensuring compliance with international arms control agreements*
- Creation of a proposed oversight and review strategy to include a description of mandatory
- information and when this information needs to be submitted for the next milestone
- Refinement of CAIV objectives

- Refinement of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) support requirement (see DoD 5000.2-R, Part 2.2.1)

* Normally not applicable to ACAT IA programs

Source: DoDD 5000.1, Para C.2 and DoD 5000.2-R, Part 1.4.4

4. Phase III – Production and Deployment

During Phase III the following should normally be done:

- Full rate production experience that verifies manufacturing and production processes, confirms the stability and producibility of the design, and provides realistic production cost estimates*
- Creation of a refined configuration management program
- Creation of an updated and validated assessment of the military threat*
- Creation of refined life cycle cost estimates
- Execution of operational and support plans, to include transition from contractor to in-house support, if appropriate

*Normally not applicable to ACAT IA programs

Source: DoDD 5000.1, Para C.2 and DoD 5000.2-R, Part 1.4.5

5. Phase IV – Operations and Support

- Identification of operational and support problems
- Resolution of system deficiencies and verification thereof in Demonstration, Test and Evaluation and Full Operational Test and Evaluation, if appropriate
- Refinement of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) support requirement (see DoD 5000.2-R, Part 2.2.1)

Source: DoDD 5000.1, Para C.2 and DoD 5000.2-R, Part 1.4.5

E. DAWIA AND ITS IMPACT

The Defense Acquisition Workforce Improvement Act (DAWIA) focuses on improving the effectiveness of the people who must implement the defense acquisition system and make it work. Although improvements in the quality and professionalism of the acquisition workforce do not guarantee that the acquisition process runs flawlessly, such improvements significantly improve the ability of personnel to carry out the acquisition process and also are intended to make it work more cost effectively.

In 1990, the Committee on Armed Services concluded that acquisition is a complex process, and that professional skills and attributes were essential for the people performing acquisition functions. Thus, a comprehensive program was needed to ensure required improvement in the quality and professionalism of those personnel working in acquisition positions throughout the Department of Defense. The Defense Acquisition Workforce Improvement Act addressed this goal by establishing the framework for a career program for all personnel wishing to pursue careers in the defense acquisition field. That framework establishes organizational responsibility and sets minimum policy objectives, to the extent necessary, for each of the elements of a career program: accession, education, training, experience, assignment, promotion, and retention. The major impacts of DAWIA have been the identification of the acquisition workforce components, definition of the acquisition corps, definition of critical acquisition positions, and definition of qualification standards for career progression of defense acquisition professionals. DAWIA also has established rotation policies for the acquisition personnel, military promotion guidelines, and specific requirements to

become member of the acquisition corps (specifically Program Manager and Program Executive Officer).

1. Identification of Acquisition Workforce Components

Initially, DAWIA provided for establishment of certain minimum education, training, and experience requirements to be met by individuals filling acquisition positions. The legislative provisions addressed acquisition positions rather than acquisition personnel in recognition of the fact that acquisition is a multidisciplinary or multifunctional career field. Acquisition includes such functions as: program management; systems planning, research, development, engineering, and testing; procurement, including contracting; industrial property management; logistics; quality control and assurance; manufacturing and production; business, cost estimating, financial management and auditing; education, training, and career development; construction; and joint development and production with other government agencies and foreign countries.

2. Acquisition Corps

In recognition of the complexity of the skills and professional characteristics required of persons in certain acquisition positions, DAWIA provided that special recognition be accorded to these individuals. Designation as a member of the Acquisition Corps is a personal distinction and implies that one so designated has met the criteria to distinguish that individual as a member of an elite group of professionals who has obtained expertise in the multidisciplinary acquisition career field. Membership in the corps does not in and of itself qualify an individual for any particular acquisition position; rather, an individual is still required to meet the specific education, training and

experience requirements established for a position he or she is seeking. Because corps designation is a personal, individual distinction, individuals retain that characterization independent of whether they are serving in an acquisition position. Although DAWIA is not intended to preclude individuals who are members of the Acquisition Corps from moving in and out of acquisition and non-acquisition positions, it is very difficult for an individual to do so other than on an exception basis and still acquire the education, training, and experience needed to qualify for many acquisition positions.

This legislation created a professional Acquisition Corps without altering the fundamental personnel structure within the military departments. The Acquisition Corps established as a result of this legislation is intended to be a highly qualified cadre of individuals who, by a demonstration of their capabilities, have earned recognition as experts in the field of acquisition.

3. Critical Acquisition Positions

Recognizing that there are certain positions that by their very nature warrant special management attention, DAWIA required the designation of critical acquisition positions. All acquisition positions to be held by GS-14s or O-5s (lieutenant colonels or commanders) or above were classified as critical acquisition positions. Additionally, certain positions such as program executive officers, program managers and deputy program managers of major defense acquisition programs, and any other acquisition positions of significant responsibility in which the primary duties are supervisory or management were designated as critical acquisition positions if held by a GS-13 or O-4 (major or lieutenant commander). The effect of the designation of critical acquisition

positions was to preclude individuals who do not possess the requisite acquisition skills from being placed in positions that are essential to the acquisition process.

Although DAWIA allows individuals to enter the Acquisition Corps at the GS-13, O-4 level, only certain positions at that level are designated as "critical" positions. Thus, the services may transition individuals (primarily military) from operational career fields into acquisition. These individuals, because they presumably are not able to meet the experience requirements for entry into the Acquisition Corps, are not able to hold critical acquisition positions. They occupy positions that provide them the necessary experience to hold a critical acquisition position when they became eligible.

4. Qualification Standards and Career Progression of Defense Acquisition Professionals

DAWIA requires that the Secretary of Defense establish qualification standards for all acquisition positions in the Department of Defense. Standards are stated in terms of the required education, training, and experience needed for each position. They should reasonably reflect the required knowledge, skills, and abilities at the various grade levels or ranks within given career fields or specialties. The standards should be written such that they are applicable without regard to whether the individual who may hold the position is civilian or military, unless the position is designated to require a military officer.

It is recognized that there may be acquisition positions that may only be held by military personnel. Such determinations are only be made after the department establishes clear and definitive criteria and conducts a position by position review to evaluate current

positions against the established criteria. It is intended that the department make a distinction with respect to experience as a desired job qualification and the need for an active-duty military member to hold a position. The Congress is expected to scrutinize the criteria established for designating a "military only" position and to review the positions designated as requiring operational experience.

DAWIA requires that the Defense Department submit standards for all positions (except those identified to be filled solely by military personnel) to the Director of the Office of Personnel Management for approval. If not disapproved within 30 days, the standards are considered approved.

To the maximum extent practicable, education, training, and experience qualification standards are the same for like positions in each military department.

5. Rotation Policy

Overall, military acquisition personnel rotate too frequently. Conversely, civilians often stay too long in any one position, thus limiting their opportunity to broaden their experience and to offer new and innovative job management perspectives. DAWIA requires that the Secretary of Defense establish a policy that allows personnel to serve in career broadening positions for sufficient time in each such position to effectively carry out the duties of the position and to allow for the establishment of responsibility and accountability.

Congress required in Section 1243 of Public Law 98-525, the Fiscal Year 1985 National Defense Authorization Act, that the tour of duty for any newly named program managers should be four years or until the program reached one of its "major milestones."

The law provided the service secretaries with the legal authority to waive the mandated tour length.

Rotation should take place every four years, not as an arbitrary measure, but as a guideline to ensure some minimum amount of continuity in the event milestones. Unless a waiver is executed by the service Secretary, a program manager or deputy program manager of a major system cannot be reassigned until after a major milestone has occurred. DAWIA requires that persons not be assigned to program manager/deputy program manager positions unless they execute a written agreement to remain in the position for the required tour length.

DAWIA provides that any persons assigned to critical acquisition positions serve in those positions for not less than three years. To foster appropriate job rotation for civilians in critical acquisition positions, DAWIA also requires that the Secretary of Defense establish a policy encouraging the rotation of members of the Acquisition Corps serving in critical acquisition positions after they have served in the position for five years (or in the case of a program manager, after completion of a major program milestone, whichever is longer).

Rotation is not required if continuation in a given critical acquisition position is in the best interest of the government and the individual.

6. Military Promotion Opportunities

A key factor in developing a more highly qualified professional military acquisition workforce is to ensure that military officers in acquisition are primarily devoted to acquisition management as opposed to operations. Consequently, it is

expected that military officers serving in the Acquisition Corps will spend the predominant share of their remaining military careers serving in acquisition positions. To offset any potential promotion disadvantage, DAWIA requires equitable advancement opportunities for highly qualified officers.

Under DAWIA, the Secretary of each military department is tasked to ensure that the qualifications of officers selected for the Acquisition Corps are such that those officers are expected to be promoted to the next higher grade at a rate not less than the rate for line officers in the same grade. Each service Secretary is required to report yearly to the Secretary of Defense regarding his department's progress in meeting promotion objectives. The Secretary of Defense, in his yearly report to Congress, includes a report on promotion rates of Acquisition Corps officers in each of the services.

7. Acquisition Corps Requirements

DAWIA specifies that, effective three years after the date of enactment, a person may not serve in the corps unless the person has a baccalaureate degree or has been certified by the acquisition career program board of the employing military department. Furthermore, acquisition personnel are also required to have completed at least 24 semester credit hours in business, finance, quantitative methods or management-related subjects. Candidates must have at least four years of experience in an acquisition position; and, as a minimum, have achieved the level of GS- 13 for civilians or major (or, in the case of the Navy, lieutenant commander) for military officers. Civilians must also have agreed to sign a mobility statement. DAWIA provides several exceptions and waivers to the standards established for Acquisition Corps members.

8. Program Manager Requirements

Qualification standards established for program managers and deputy program managers intend that only the most highly qualified acquisition personnel are selected for these positions. Although DAWIA did not specify in detail what these qualifications should be, it provides minimum standards. It requires that Acquisition Corps personnel fill these positions. They must also have completed the program management course at the Defense Systems Management College (DSMC) or a management program at an accredited educational institution in the private sector. Finally, they must have signed a written agreement to remain in their position at least until completion of the first major milestone that occurs closest in time to the date the person has served in the position for four years.

Under DAWIA, program managers and deputy program managers of major programs also must have at least eight years experience in acquisition. At least two of those years of experience must be in a systems program office. To qualify as program managers and deputy program managers of less than major systems, individuals are required to have at least six years acquisition experience.

9. Program Executive Officers

Program executive officer positions would be filled by a member of the acquisition corps. Individuals assigned to these positions also are required to have completed the program management course at the Defense Systems Management College (or a management program at an accredited educational institution in the private sector determined to be comparable); to have at least ten years experience in acquisition

positions, at least four of which qualify as a critical acquisition positions; and to have held a previous position as a program manager or deputy program manager.

F. CHAPTER SUMMARY

This Chapter describes the historical development of the Systems Acquisition Process in the United States; lists the key players in the process and their responsibilities; describes and analyzes the program structure; and analyzes the profile of the acquisition workforce. Chapter III addresses similar aspects of the Military Acquisition Process in El Salvador. Chapter V compares and analyzes the processes in both countries, focusing on the role of the Executive, the role of Congress, the budgetary process, the acquisition program structure, and resource allocation during times of financial constraints.

V. COMPARISON AND CRITICAL ANALYSIS OF THE ACQUISITION PROCESSES IN EL SALVADOR AND THE UNITED STATES

A. ROLE OF THE PRESIDENT

1. Similarities in the Role of the President

The role played by the President of El Salvador in the military acquisition process has the following similarities to the role played by the President of the United States in the acquisition process of the United States.

- The presidents of both countries are responsible for the development of national security policies. The development of national security policies implies the potential usage of military force and, thus, requires the development of a military policy. The military policy of each country is translated into objectives and goals. The achievement of the objectives of the military policy generates needs for military equipment.
- The presidents of both countries provide the general guidance that shapes the budgets of their countries, thus affecting directly the availability of funds for military acquisitions.
- In both countries, the President is Commander in Chief of the armed forces, and has discretionary power on the utilization of the military forces to achieve national objectives.
- The presidents of both countries are also responsible, with the authorization of their respective congresses, for providing their armed forces with the necessary materiel and personnel to carry out their missions.
- The Executive Branches of both countries contract with the defense industry. They are also tasked with the prevention and elimination of fraud, waste, and abuse in acquisition.

2. Differences in the Role of the President

The role played by the President of El Salvador in the military acquisition process has the following differences with the role played by the President of the United States in the acquisition process of the United States.

- Although the Constitution of El Salvador has provisions for a system of checks and balances between the Executive, the Legislative and the Judiciary Branches of government, the Executive has traditionally been the most influential of the three branches (Library of Congress, 1988). Throughout Salvadoran history, the armed forces have been instrumental to the supremacy of the Executive over the other branches of government, especially during the periods when the Executive and the armed forces were one and the same.¹³ Until 1991, the President's budget proposal was rarely the subject of congressional scrutiny, and the budget proposal for the armed forces was particularly untouchable (Tovar, 1999). The Salvadoran Legislative Branch has become increasingly more important since the signature of the peace agreements of 1991, but the developers of the defense budget recognize that the Ministry of Defense has not completely adapted to the new political situation, and the budget is still prepared assuming little congressional interference (Giralt, 1999). In the United States the opposite is true, and the President must clearly justify to Congress the budget of every government agency.
- The President of the United States has a complete staff of military and civilian personnel to seek advise in matters of national security. In the United States there is an abundance of civilian personnel highly knowledgeable in national security affairs, military policy, diplomacy, foreign relations, and other areas of the political science. The military of the United States is also highly trained and knowledgeable, not only on military science, but also often in other social and physical sciences. This is congruent with the role of the United States as a first world power. In El Salvador the staff that advises the President in matters of national security is mainly military personnel. In El Salvador only a few civilians

¹³ The majority of Salvadoran presidents have been members of the military. The period that best exemplifies the supremacy of the Executive over the other branches was from 1932 to 1979, when El Salvador was governed by successive military regimes.

have received formal instruction in national security.¹⁴ Military policy has traditionally been the realm of the military high command, and other sectors of the political society have had little participation in the design of the military policies.

- The strategic intelligence available to the President of the United States is of very high quality. The Executive Branch in the United States has enough resources and trained personnel to produce the relevant information to generate defense requirements. In El Salvador, as noted in Section D of Chapter III, the Executive Branch has to devise defense policy without having a reliable source of intelligence.

B. ROLE OF CONGRESS

In El Salvador and in the United States, the Congresses have the “power of the purse.” The President’s budget proposal can only become the Nation’s budget after the approval of Congress has been granted. In both nations the respective congresses approve, or disapprove, funding for military acquisitions. However, that is where the similarities between the roles of the two congresses end.

The US Congress sets the ceilings for manpower and equipment in the armed forces. The Salvadoran Congress does not interfere in the determination of the size of the armed forces, or the quantities and type of equipment provided to the armed forces. The Salvadoran Congress plays a minor role in military acquisitions. The purpose of the Salvadoran congressional defense committee is to legislate in matters of military doctrine and military justice. In particular, this committee is in charge of civil-military relations and relations between the armed forces and Congress. Decisions on military acquisitions

¹⁴ The government sponsored School of High Strategic Studies (Colegio de Altos Estudios Estrategicos) opened in 1992. Until the opening of this school, none of the Salvadoran institutions of higher learning had programs on National Security and National Defense.

are left in the hands of the military.¹⁵ The Salvadoran Congress has become more influential in the Salvadoran democracy, and soon the country will witness how the President's budget becomes the subject of close congressional scrutiny (Giralt, 1999). The lack of congressional involvement in military acquisitions could be potentially harmful to national security. Under the current conditions, the Salvadoran Congress does not have enough information about the acquisition projects of the armed forces. These projects are only shared with Congress when the President's budget proposal is sent to Congress. Since Congress is not informed about the threat analysis or the need for equipment, Congress could deny funding for a specific acquisition project even if the project is essential to national security. Such action would be legitimate and justified because congressmen could not make an informed decision due to their lack of involvement in the acquisition process.

In the United States, Congress plays a very active role in national defense, and specifically in military acquisitions. Congress exerts micromanagement on the Department of Defense by exercising the "power of the purse." Over time congressional oversight of defense spending has steadily increased. L. R. Jones identifies the following causes of this increment in micromanagement: budget and committee reforms within Congress; public attitude towards defense spending; growth and shrinkage of the defense budget; increased spending on uncontrollables within the federal budget and deficit control pressures; and growth of Congressional staff size and expertise on defense matters

¹⁵ The lack of congressional involvement in military acquisitions is a remnant of the periods when the military was not subject to civilian control.

(Jones, 1992, 123). According to the author the increases in congressional oversight are linked to all of these causes, and over time none of them plays a predominant role.

The large amounts of money that are spent on Defense programs lure politicians more interested in tending to their local constituents than to national defense issues. A good politician cannot afford to miss out in the distribution of DoD budget pie. There is a motivation for everybody to be a part of the budget making process in defense issues. This factor also explains the proliferation of committee involvement in defense issues, and why members of Congress want to have knowledgeable staffs that can best advise them on defense programs.

The public perception of DoD management of its budget also plays a key role in explaining the level of congressional oversight in defense issues. Public opinion and media attention given to waste, fraud and abuse in defense programs has increased since the Vietnam War. Politicians have tried to appease their constituents, who expect them to be guardians of the public purse, by increasing their control over defense spending. In other countries, where the media does not enjoy the same freedom that American media does, the general public has less knowledge about fraud in defense issues and, therefore, demands less involvement from their Congressmen in budget allocation to defense programs.

Excessive intervention of self-interested members of Congress in Defense issues is negative for national defense. There is evidence to support the claim that national security objectives become of lesser importance as to where and when defense money should be spent. Many defense programs that are not mission-critical, or that do not

respond to any threat are kept alive only to satisfy influential members of Congress. These kinds of practices are dangerous for the nation, especially during times when the resources are scarce. The nation cannot let the budget direct its national security policy. To the contrary, the policy should drive the budget.

C. PROGRAM STRUCTURE

[In the United States the] defense acquisition system is a single uniform system whereby all equipment, facilities, and services are planned, developed, acquired, maintained, and disposed by the Department of Defense. The system includes practices that govern acquisition, identifying, and prioritizing resource requirements, directing and controlling the process, contracting, and reporting to congress. A successful acquisition system is one that delivers to the end user a capable and supportable system, when and where is needed, and does so in an affordable manner. (Schmoll, 1996)

The Office of Management and Budget (OMB) enforces basic acquisition policy and procedures established in law in the United States. Circular A-109 of the Office of Management and Budget defines the acquisition process as a, "sequence of acquisition activities starting from the agency's mission needs, with its capabilities, priorities, and resources (dollars), extending through introduction into use or successful achievement of program objectives." Circular A-109 includes requirements to:

- Express needs and objectives in mission terms.
- Emphasize competitive exploration of alternatives.
- Communicate with Congress early and frequently.
- Establish clear lines of management authority, and designate a Program Manager for each major program.

- Avoid premature commitment to full scale development and production.

The Department of Defense has implemented the provisions of OMB Circular A-109 via DoD Directive 5000.1 "Defense Acquisitions," and DoD Directive 5000.2R "Mandatory Procedures for Major Defense Acquisition Programs and Major Information System Acquisition Programs." The DoD Directive 5000.1 describes three major principles to guide all defense acquisitions¹⁶:

- Translating operational needs into stable, affordable programs
- Acquiring quality products.
- Organizing for efficiency and effectiveness.

The DoD Directive 5000.2R sets a simplified and flexible management framework for translating mission needs into acquisition programs. The general model consists of four major milestones and four phases of the life cycle management. The acquisition process is carried out by a select group of acquisition professionals, both military and civilians, who possess knowledge in many different fields. Improvement of acquisition personnel, as a result of DAWIA and the other initiatives described in the previous Chapter has promoted the development of a process that uses a scientific approach to accomplish its objectives.

In El Salvador, the program structure is not as complex and well defined as in the United States. The defense acquisition process is based in the Acquisition Law of the Republic of El Salvador and the corresponding regulations (Ley de Suministros y

¹⁶ For a more detailed explanation of the principles that guide military acquisitions in the US see Appendix G.

Reglamento de la Ley de Suministros). The acquisition legislation was signed into law in 1945, and since then there have been minor modifications in 1949, 1978, and 1990.¹⁷ The President and Congress have already deemed the current acquisition laws obsolete, and Congress is in the process of developing a new law that includes a more updated management framework. The present acquisition process in El Salvador can be compared to the acquisition process used by the United States during the 1940s. The emphasis of the process is to follow procedures and avoid violations of the law. There are no specific management principles to shape the process, and, as a result, price becomes the decisive factor to choose between alternatives. Although the defense acquisition framework in El Salvador is not yet established, the officers working in acquisitions have acknowledged the lack of an appropriate process, and have committed to the development of a new process that incorporates modern management techniques. The military acquisition division of the Ministry of Defense also has acknowledged that it is necessary to improve the quality of the acquisition workforce. However, the division has not yet initiated any actions to improve the workforce (Martinez, 1999).

D. BUDGETING FOR DEFENSE

1. The Budget Process in the United States

The federal budget process in the United States has two main phases, the formulation phase and the execution phase. Most of the important decisions concerning

¹⁷ The Salvadoran acquisition law provides general guidance for solicitation of offers, establishes who can contract in name of the government, and who is allowed to make businesses with the government.

how much to spend and how to spend on government programs are made during the formulation phase, that includes the preparation of the estimates, negotiation, and the enactment of the budget. During the execution phase that includes the spending, monitoring and control, and audit and evaluation, the corresponding agencies and auditors evaluate whether money appropriated by Congress was spent according to the law, and if it was spent efficiently. The most important decision points in the federal budget cycle are the President's budget proposal and the budget negotiation that takes place in Congress. At these two stages, the corresponding government agencies reach decisions about how much money is needed to accomplish the government's missions, and Congress decides how much should be appropriated and spent to satisfy those needs.

The first part of the formulation phase is the President's budget proposal. This proposal is important because it allows the different government agencies to provide their input and request the funds they deem necessary to accomplish their missions. The effective needs of the clients or users cannot be defined without the input provided by them. Only the corresponding agency can accurately determine how much money it needs to produce the outcome that it is expected from it. Preparation of the executive budget involves the federal agencies that request the funds; the Office of Management and Budget, which reviews the request and compiles the document; and the

President who is responsible for submitting his budget to Congress (Shick, 1995). Preparation of the President's budget generally follows a bottom-up approach. However, the President, who establishes priorities among competing agencies in accordance to his policies, sometimes influences the resource allocation in his proposal. The size of this

budget request is also influenced by the perception the President has about Congress. The President and executive departments and agencies along with OMB must balance what they want with what they can get, and if the Executive perceives Congress will not appropriate the requested amounts, most likely it will, as a strategy, ask for more than is actually needed hoping to obtain the appropriate funding for projects.

The next part of the formulation phase is the budget negotiation that takes place in Congress, critical in the budgetary decision making process. The authorizing committees, the appropriation committees, the revenue committees and the budget committees of the House and the Senate perform the congressional actions on the budget. The negotiations that take place within Congress and between Congress and the Executive assist the legislative branch in exercising the "power of the purse." Money can only be spent on a program or agency if Congress has given its approval through authorizations and appropriations. This approval requires two actions: authorization by an authorizing committee and appropriation of funds by the appropriation committees. This is part of a system of checks and balances that is intended to prevent any agency from becoming too powerful. The authorization and the appropriation committees play the most critical roles in budget negotiation in Congress.

After the President's budget proposal has been submitted, officials from the requesting agencies must justify their requests at hearings held by the appropriation subcommittees. The appropriation committees and subcommittees act as "guardians" of the purse. Congressmen are selected to serve on appropriation committees and subcommittees under the assumption that they typically have a vested interest in the

subject of the appropriation. However members of these committees are expected to do their best to keep government expenses to the target levels set in the Budget Resolution passed by the Budget Committees and to ensure that taxpayer dollars are spent efficiently. Congressmen perform this role in defense of the interest of their constituents. Recognizing that sometimes they do not have the technical expertise to make budget decisions, especially when dealing with highly technical fields, most congressmen rely heavily on their staffs. This is a driving factor that has led to increasingly larger staffs. Important decisions about how much money should be granted to an agency or program take place within the appropriation committees and subcommittees. At this level strong competition for scarce resources takes place. Officials from the different programs and agencies must bear in mind that Congress holds the power of the purse. They also must devise the appropriate strategies to deal with the many rules and many instances in which they have to defend their programs to obtain funding

2. The Budget Process in El Salvador

The budget process is less complicated in El Salvador. The President must submit to Congress a budget proposal that specifies the funding needs for all government agencies. The President's budget proposal is a reflection of the priorities set by the President among competing agencies. The size of the President's budget is influenced by the perception that he has about Congress. The President, like his counterpart in the United States, most likely will ask for more funding than is needed hoping to obtain the right levels of funding for agencies. Traditionally, the President's budget has obtained congressional approval without many difficulties. The most critical part of the Salvadoran

budget process is formulating the President's proposal, because the Salvadoran Congress becomes heavily involved only if the proposal implies a severe augmentation to the national deficit. The Salvadoran Congress does not have to authorize the existence of a government program; however, Congress controls the funding for all government agencies. The role of Congress in the budget process is limited to ensure control over the deficit.¹⁸ In this way its role is similar to that of the US Congress. However, presently the role of Congress in El Salvador does not include detailed examination and appropriation of the proposals contained in the defense budget. Under democracy, the role of Congress in examining the defense budget proposal could increase. However, it is unlikely to ever equal the role played in the process by the US Congress.

E. RESOURCE ALLOCATION DURING TIMES OF FISCAL CONSTRAINTS

The US Department of Defense has managed fiscal stress by following four strategies: reductions across-the-board, specific program reductions, program termination, and program reorganization and consolidation (Jones, 168). Although the strategies followed by DoD to cope with restricted budgets that started in FY86 were carefully planned, the reductions were not mission-oriented until 1991. The strategies were mere "patch up" solutions to a problem that demanded more careful consideration. The implications of the cuts in defense spending during the last decade have recently become

¹⁸ The Budget for Fiscal Year 1999 has not been approved yet as for 12 April 1999. There are not congressional objections to specific programs, but some members of congress feel that the proposed budget will increase the national deficit to non-permissible levels.

more evident. High ranking military leaders now express concern about the US military becoming a "hollow force." At the beginning of 1998, the Secretary of Defense campaigned for more military base closings because, according to his advisors, DoD could not afford new weapon systems if money had to be channeled to the maintenance of existing bases.

The DoD is now attempting to deal with financial stress using a more scientific approach to management. Part of the answer was to use the reengineering techniques that most private businesses now use. This approach includes restructuring by identifying the organization's core competencies, eliminating wasteful activities, and contracting everything that is not a core competency of the organization. The solution to DoD financial problems may include some new approaches that focus on quality of service, reducing cycle time and cutting costs. The solution ultimately requires the attempt of reinvention of the whole organization. In any case, the organization's mission must be the first priority, and all resources should be spent in accordance with strict priority ranking.

The Ministry of Defense of El Salvador has reacted to financial crisis by implementing drastic reductions in personnel, reductions across-the-board, and program termination. The Finance Office of the Ministry of Defense has tried unsuccessfully to implement mission-oriented budgeting during the last five years (Tovar, 1999). The main obstacle to the implementation is that military commanders still believe in incremental budgeting, or the traditional way, is the best way to develop the defense budget. The implications of the cuts in defense spending during the last decade have started to come

afloat. The Ministry of Defense has announced that it cannot afford new weapon systems because money has to be channeled to the maintenance of the bases. Military commanders consider that military presence in all the geographical regions of the country is essential to the mission of the armed forces, and consider that base closures should be the last resort to be considered to deal with the financial crisis (Bennet, 1999). The acquisition division is also considering improving its acquisition procedures by implementing modern management techniques including life cycle management and management by objectives, hence the purpose of this thesis (Martinez, 1999).

F. CHAPTER SUMMARY

Chapters III and IV review the acquisition processes in El Salvador and the United States respectively. After reviewing the processes, I concluded that direct comparisons between the two countries were not always possible, because El Salvador and the United States are two nations with different populations, culture, government structure, resources, and armed forces. This Chapter uses the findings of Chapters III and IV to compare and analyze the two processes by focusing on the elements that are common to both processes. The comparison focused on the key players and their roles, the program structure, and the personnel performing acquisitions in both countries. The critical analysis emphasized the similarities and differences in those three areas. In the next Chapter, based on the comparison and critical analysis, I present my conclusion on whether the Salvadoran acquisition process can be improved by using the US DoD model as a benchmark.

VI. CONCLUSIONS AND RECOMMENDATIONS

The military acquisition process in El Salvador can be improved by using the US Department of Defense model as a benchmark. The Salvadoran armed forces have to face a new environment in which resources are severely constrained. To accomplish their constitutional mission effectively and efficiently, the Salvadoran armed forces must use a more scientific approach to military acquisitions than the one currently used. The Salvadoran armed forces are reforming the current acquisition process, and looking for a way to incorporate modern management techniques into the process. The reforms must ensure that the main priority of the acquisition process is to provide the armed forces with the equipment that is necessary to counteract the threat (Martinez, 1999).

The US military acquisition process has three main focal points that can be of great help to devise the reforms to the Salvadoran acquisition process. First, careful examination and validation of the threat and the alternatives to counteract it are essential steps to reach sound economic decisions. Second, the military equipment of the armed forces must be of the highest quality available; it must also be acquired at reasonable prices but, above all things, it must respond to the effective needs of the armed forces. The US Department of Defense model for military acquisitions uses an approach developed based on systems engineering and, as a result, military acquisitions satisfy an effective need. Third, a professional community of the highest quality must handle the acquisition process to ensure that it is carried out effectively and efficiently.

This research can help the Salvadoran armed forces to develop a more effective acquisition system by providing a frame of reference that can be applied to analyze acquisition problems and to define potential solutions. The comparison between the two models reveals some of the weaknesses of the Salvadoran model. The purpose of assessing the current acquisition model in El Salvador is to help develop a more effective and efficient process.

The secondary research questions are addressed in Sections A through F of this Chapter. The answers to these questions indicate that, despite of the potential problems to implement the reforms, using the US acquisition model as a benchmark would be advantageous for El Salvador in organizing a new acquisition process.

A. IS THERE A NEED FOR A MILITARY ACQUISITION PROCESS IN THE EL SALVADOR MINISTRY OF DEFENSE?

El Salvador needs a new military acquisition process that responds to the new political environment of the country. El Salvador is an independent nation that has exercised its right to defend its sovereignty and its territory by creating, organizing, and maintaining the Salvadoran armed forces. Maintaining the armed forces implies a responsibility to provide them with the right equipment in adequate quantities to dissuade any potential threat to national objectives. However, equipping the armed forces demands a military acquisition process that delivers to the end user high quality equipment, that optimizes the use of national resources, and that is congruent with the development status of the nation.

In El Salvador, like in the United States, the armed forces must compete against other government agencies for scarce resources. The end of the civil war in 1991 brought to the Salvadoran armed forces budgetary constraints that must be faced using innovative solutions that are within the legal framework. Defense spending has become low priority among the Salvadoran political leadership, who would rather see tax money used to improve education, public health, or the national infrastructure. The precarious financial situation of the armed forces has forced the high command to limit military acquisitions to the minimum. The lack of equipment renewal is negatively affecting national security because the Salvadoran armed forces have limited the training to avoid excessive wear and tear of the existing equipment (Calderon, 1999).¹⁹ The approach taken by the armed forces high command is not totally congruent with their responsibility to provide the units with the means to accomplish their missions. The answer to the problem is not to minimize equipment acquisitions. The armed forces of El Salvador need a process that clearly demonstrates the need for equipment, and presents that information in such a way that it would preclude Congress from denying funds for acquisitions.

The Ministry of Defense must have a mechanism that ensures optimal usage of the available resources, and limits fraud, waste and abuse in acquisitions. In El Salvador there is need for a well-structured process that permits the validation of the threat and the validation of the alternatives to counteract the threat. The acquisition process of the

¹⁹ The Salvadoran armed forces have intensified the use of paper exercises and the use of a newly acquired tactical combat simulator. Field training exercises are limited in number, and rarely involve the use of combined arms.

Ministry of Defense must also facilitate monitoring and controlling military acquisitions during all phases of the life cycle of the equipment. The acquisition process must also facilitate timely deployment of the equipment, and have provisions for the proper disposal of weapon systems that become obsolete.

Under the current system, the Salvadoran military acquisition process meets none of the above requirements. The acquisition division of the El Salvador Ministry of Defense performs like a purchasing agency that is in charge of contracting with the defense industry for delivering the products. The responsibility for the validation of the threat, the validation of the mission need and, more importantly, the selection of the weapon systems is in the hands of other defense agencies that do not work in close coordination with the acquisition division. The current system does not allow accountability and control because it is possible to have efficiently managed contracts for weapons system that do not respond to the threat. Life cycle management is not practiced in the El Salvador Ministry of Defense, which causes some units not to have the equipment needed to accomplish their intended missions. Instead, they have equipment that is more suitable for a museum.²⁰

²⁰ The Salvadoran Air Force still flies C-47 cargo airplanes, which are the same ones used in the Normandy invasion. These aircraft have undergone extensive overhauls and modifications, but the reality is that they are upgraded relics that require intensive maintenance programs. The armed forces could be better off retiring obsolete equipment and buying new equipment.

B. IS THE CURRENT ACQUISITION PROCESS IN EL SALVADOR EFFECTIVE AND EFFICIENT?

The current acquisition process in El Salvador is neither effective nor efficient given the new political environment of the country. Since the end of the civil war, Congress has become increasingly more influential, and this trend will continue as the Salvadoran democracy matures. The current acquisition process was designed assuming that Congress would not question the financial decisions of the armed forces. El Salvador needs an acquisition process that accepts and welcomes more participation by Congress in matters of national defense. Congressional review and oversight would only be welcomed in the acquisition process if all procedures were transparent, honest and logical. Congressional oversight is less likely to become a burden to the armed forces if all the requests to fund acquisitions are based on systematic needs analysis, and are well documented and validated.

C. IS THE DOD MILITARY ACQUISITION PROCESS RATIONAL, EFFECTIVE, EFFICIENT, AND ADJUSTABLE?

The US acquisition model applies a scientific approach to solve the equipment needs of the armed forces. The model uses modern management techniques that translate broad mission statements into sophisticated and complex weapon systems that are timely delivered to the end users. The vast superiority of the military equipment of the armed forces of the United States over any other country in the world is the best affirmation that the acquisition process is effective. The scope of this thesis research does not allow drawing conclusions on the overall efficiency of the process. It would be almost

impossible to quantify the benefits of the implementation of the current program management system. However, it is possible to assume that the adoption of the four-milestone acquisition process at least has facilitated control over extremely complex projects.

The current program management structure provides a single point of contact, the Program Manager, who is the major force for directing the system through its evolution from a need statement to the disposal phase. The Program Manager, while perhaps unable to control the environment, has management authority over business and technical aspects of a specific program. The Program Manager has only one responsibility—managing the program—and accountability is clear. (Schmoll, 1996)

The historic evolution of the acquisition process in the United States provides evidence that the process is adaptable. The process has been revised and modified on numerous occasions to respond to the changes in the political environment of the United States. The process evolved from a system that functioned with little congressional oversight in the past, to the current process that includes close congressional supervision of the Department of Defense. The process has also adapted from the process in which each service individually requested what they deemed necessary to accomplish their missions, to a process in which the Department of Defense has centralized control over the three services and demands joint efforts in the acquisition of weapons systems. Analysis of the history of the military acquisitions in the United States reveals that the process has also been flexible and adaptable to overcome the financial constraints that follow wartime periods.

D. ARE THE ADVANTAGES AND DEFICIENCIES OF THE ACQUISITION PROCESSES IN BOTH COUNTRIES DETERMINABLE AND COMPARABLE?

The nature of this research is deductive. I tested the hypothesis that the military acquisitions process of El Salvador's Ministry of Defense can be improved by using the US DoD acquisition model as a benchmark. I reviewed the acquisition processes in the US and in El Salvador. I compared the two processes and found that direct comparison between these two countries is not always possible. El Salvador and the United States are two nations with different population, culture, government structure, resources, and armed forces. The deductive research technique required me to focus on those elements that are common to both processes. I focused on the key players and their roles, the program structure, and the personnel performing acquisitions in both countries. I noted the similarities and the differences in those three areas. I tried to find the elements that the Salvadoran acquisition process is missing in order to resemble the US acquisition process. I assumed that the US acquisition process is worthy of being a benchmark to compare the Salvadoran model against because of its high level of development.

I also tested, using a deductive approach, the feasibility of adopting the American model in El Salvador. This required the analysis of the historical development of the US acquisition process. I concluded that the Salvadoran military acquisitions are at a stage of development that corresponds to the development stage of the US acquisitions in the 1940s. I concluded that even if the US acquisition process cannot be transplanted unchanged to El Salvador, the core tenets of the process can be transferred to El Salvador, and the process could initiate its own evolution.

E. WHAT WOULD BE THE BENEFITS OF APPLYING THE DOD MODEL TO EL SALVADOR?

Applying the US DoD acquisition model to El Salvador would bring the following benefits to the Salvadoran armed forces:

- The military acquisitions will respond to mission needs, thus facilitating the implementation of mission oriented budgeting in the Ministry of Defense.
- The validation of the threat and the validation of the alternatives to counteract the threat will justify request for funds.
- Life cycle management facilitates monitoring and control of weapons systems, therefore, improving the operational readiness of the armed forces.
- Adopting a process that carefully plans and documents the different stages of substantial acquisition programs will improve the relationship between the armed forces and Congress.

F. WHAT WOULD BE THE DISADVANTAGES OF APPLYING THE DOD MODEL TO EL SALVADOR?

Professor W. Ramsey of the US Army School of the Americas, Ft. Benning, GA, has taught defense resources management to Latin-American armed forces since 1993.²¹ In his experience, he has observed that preparing American officers to take financial positions within the armed forces requires a sophisticated curriculum that is heavy on calculus, probability theory, and specialized vocabulary. Case studies deal with the selection, acquisition, and life-cycle management of technologies. At the applied level,

²¹ Professor Ramsey is a Resident Civilian Professor at the School of the Americas. In 1993 the School of the Americas directed him to install the Resource Management Course taught at the Naval Postgraduate School, Monterey, CA.

contractor personnel do the creative part and the calculation, under the auditing, budgetary, and contract supervision of the Department of Defense officers and civilians.

Application of a complex model like the US acquisition model to a country like El Salvador requires more than translating and transferring the procedures. The application of the US acquisition model to El Salvador would not work unless the Salvadoran armed forces could fit the model into their own thinking and organizations, and apply it to the Salvadoran social and government system. Adaptation of the US model to El Salvador is challenging because of the educational level differences of the acquisition workforce of both countries. The size of the corresponding armed forces also is a factor to consider in the adaptation of the model. The US acquisition process was designed to satisfy the equipment needs of one of the largest armed forces in the world. The US armed forces have global forward presence and many objectives in different regions of the world. On the other hand, El Salvador has a small Army, the Navy does mostly coast-guard missions, and the Air Force specializes in transportation and border surveillance. According to Ramsey,

Adapting and teaching of a defense resource management model to a country like El Salvador has three cognitive challenges. First, cognitive content should be built around five areas: microeconomic analysis, decision science, comparative management theory, operations analysis, and cyclical budget preparation. Second, post-graduate mathematics should be reduced to algebra and probability calculation useful to professional officers who will deal with contractors and engineers. Third, case studies should be reduced to believable dimensions. For example, instead of analyzing the acquisition of three supersonic aircraft platforms, Salvadoran officers should be trained to handle acquisitions for brigades or similar units. (Ramsey, 1994)

G. RECOMMENDATIONS

The following recommendations are specific actions that should be taken by the Ministry of Defense of El Salvador to improve the acquisition process. They have been developed using the conclusions of this thesis research.

- The weapon systems to be acquired by the armed forces of El Salvador must respond to mission needs. It is vital that the strategic intelligence and the threat analysis are performed in the best way possible. The validation of the threat and the analysis of alternatives can only be effective if the available intelligence is reliable. As noted in Section B of Chapter III, El Salvador must substantially improve the strategic intelligence gathering process. Although this recommendation does not affect the personnel working on acquisitions, or the acquisition process, it is a crucial starting point for the development of an acquisition process that fields to the troops the equipment that is indeed needed.
- El Salvador Ministry of Defense also must implement educational courses or seminars for the civilian and military personnel involved in defense acquisitions. El Salvador does not need to develop an Acquisition Corps as in the United States, but every professional involved in acquisitions must have specialized training that allows him/her to perform his duties effectively and efficiently.
- El Salvador should implement, as soon as possible, an acquisition workforce improvement program by which a person may not serve in military acquisitions unless the person has a baccalaureate degree. Furthermore, acquisition personnel should be required to have completed at least 24 semester credit hours in business, finance, quantitative methods or management-related subjects. Candidates should have at least four years of experience in an acquisition position.
- Currently in El Salvador, military officers working in acquisitions belong to the combat service support category. The Salvadoran law of military promotions establishes that within the same year group, the combat arms officers will outrank the service support officers. The same law precludes service support officers from certain command positions in the armed forces high command. Recruiting quality military personnel to work in acquisitions is difficult because of the lack of incentives. Although service support officers draw higher salaries than their combat arms peers do to compensate for the inequalities between the two officer categories,

monetary compensations are not substantial enough to overcome the disparities created by the law. To improve the quality of the acquisitions workforce, El Salvador Ministry of Defense should reconsider the military promotion law, modifying if necessary, to allow service support officers to be promoted at the same rate than combat officers. Service support officers should be allowed, and even directed, to attend the command and general staff course, and should not be precluded from holding positions in the armed forces high command.

- El Salvador Ministry of Defense should ensure that all personnel involved in military acquisitions are certified in the National Financial Management System (Sistema de Administracion Financiera).
- El Salvador Ministry of Defense should review and consider the adoption of the following principles set forth by Circular A-109 of the US Office of Management and Budget. First, express needs and objectives in mission terms to emphasize competitive exploration of alternatives. Second, communicate with Congress early and frequently. Third, establish clear lines of management authority, and designate a Program Manager for each major program. Fourth, avoid premature commitment to full scale development and production.
- The acquisition division of the Ministry of Defense of El Salvador also should review and consider adopting the following principles to guide all defense acquisitions set forth by US DoD Directive 5000.1. First, translate operational needs into stable, affordable programs. Second, acquire quality products. Third, organize for efficiency and effectiveness.²²
- El Salvador Ministry of Defense should consider adopting a four-milestone acquisition process similar to the acquisition process of the United States. However, the El Salvador Ministry of Defense must consider that the US acquisition process is highly bureaucratic and has too many steps in it. The US model should be used only as a frame of reference to incorporate the concept of life cycle management into military acquisitions.
- If the four-milestone acquisition process is adopted, the El Salvador Ministry of Defense also should consider adopting the concept of program managers who are solely dedicated to one or two projects in related fields.

²² For a detailed explanation of the principles that guide military acquisitions in the US see Appendix G.

Rotation of program managers also should occur after completion a milestone to facilitate the learning process and training.

- El Salvador Ministry of Defense also should limit contract revision to only one agency. Currently, both the acquisition division of the Finance Office of the Ministry of Defense and the Armed Forces Acquisition Committee perform the same function.
- The Ministry of Defense of El Salvador also should request appropriate funding to conduct independent test and evaluations of the products that it buys. Appropriate funding also should be requested to conduct evaluations of the impact that weapon systems have on the environment.
- The C-IV of the General Staff should generate a requirements list that identifies the mission needs of the armed forces, instead of identifying products by manufacturer name. Identifying mission needs would allow the Armed Forces Acquisition Committee and the acquisition division of the Ministry of Defense to perform better analysis of alternatives because the process also would include cost analysis.
- In the United States, each Service handles its own budget and its own acquisition process (with emphasis on joint programs). The acquisition process in El Salvador should remain centralized in one agency, unless each Service develops its own financial structure. Even if this occurs, acquisitions probably should remain centralized with input from the services on mission requirements.
- The El Salvador Ministry of Defense also should assume increasing congressional oversight of the acquisition and budget process. Congress and the Ministry of Defense should establish a civilian-military relationship based on transparency and honesty. Congress should become more familiar with the armed forces and their mission through specially oriented courses in national security and national defense before taking on the revision of the oversight function of Congress in the acquisition process.²³

The recommendations listed above are only incremental steps towards the improvement of the acquisition process in El Salvador, and are far from final solutions.

²³ Congressional participation in national defense seminars and courses hosted by the School of High Strategic Studies (Colegio de Altos Estudios Estrategicos) has been limited.

The last recommendation is to continue researching ways to improve the acquisitions process in El Salvador, specifically by evaluating the acquisition processes of Latin-American countries like Chile, Argentina, Venezuela and Brazil that have already developed more advanced acquisition processes and management techniques.

APPENDIX A. MILITARY EQUIPMENT OF THE CENTRAL AMERICAN COUNTRIES

The official threat analysis and evaluation could not be used for this thesis, and unclassified sources had to be used instead. The analysis shows that El Salvador could face potential adversaries that are better equipped. Honduras has air superiority in the region, and El Salvador opposes no match against its capacity. The Honduran armored and tank units have more and newer equipment than their Salvadorans counterparts. However, Nicaragua is superior to any other country in the region in number and capacity of their armored and tank units, field artillery and naval units. El Salvador has parity with Guatemala in land, air and sea forces.

Honduras

Type and Description	Country of Origin	In Inventory
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ARMY

Tanks		
Scorpion	UK	12
Armed Reconnaissance		
Scimitar	UK	3
Sultan	UK	1
Saladin	UK	50
RBY MK1	Israel	12
Towed Artillery		
M-102, 105mm	USA	24
M-198, 155mm	USA	4
Mortars		
60mm/81mm	Various	400
Brandt, 120mm	France	60
Soltan, 160mm	Israel	30
Rocket Launchers		
Carl Gustav, 84mm	Sweden	120

ARMY cont.

M40A1, 106mm	USA	80
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NAVY

Patrol Craft, various	USA	11
Inshore Craft, various	USA	14
Amphibious		
Punta Caxinas LCT	USA	1
LCM	USA	3

AIR FORCE

Fighter-Ground attack		
A-37B	USA	13
F-5E	USA	10
F-5F	USA	2
Fighter		
Super Mystere B2	Belgium	8
Transport		
C-47	USA	9
C-123	USA	1
C-130A	USA	4
DHC-5	Canada	2
L-188	USA	1
Liaison		
Baron	USA	1
Cessna 172	USA	3
Cessna 180	USA	2
Cessna 185	USA	2
Commander	USA	4
PA-31	USA	1
PA-34	USA	1
Helicopters		
Bell 412	USA	9
Hughes 500	USA	4
TH-55	USA	5
UH-1B	USA	8
UH-1H	USA	7
S-76	USA	1
Training		
C-101B	USA	4
U-17A	USA	6
EMB-312	Brazil	11
T-41A	USA	5

Nicaragua

Type and Description	Country of Origin	In Inventory
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ARMY

Tanks		
T55 (heavy)	Soviet Union	1301
PT-76 (light)	Soviet Union	22
Armored Reconnaissance		
BRDM-2	Soviet Union	801
Armored Personal Carriers		
BTR-60	Soviet Union	19
BTR-152 (wheeled)	Soviet Union	1001
Towed Artillery		
D-30 122mm	Soviet Union	36
D-20 152mm	Soviet Union	60
Mortars		
82mm	Soviet Union	500
M-43 120mm	Soviet Union	20
M-160 160mm	Soviet Union	NA
Multiple Rocket Launcher		
Type 63 107mm	China	30
BM-21 122mm	Soviet Union	30
Antitank Weapons		
AT-3 Sagger missile	Soviet Union	12
SIZ-2 57mm	Soviet Union	325
ZIS-3 76mm	Soviet Union	84
M-1944 100mm	Soviet Union	24
Surface to Air Missiles		
S-7, S-14, S-16	Soviet Union	500

AIR FORCE

Attack		
Cessna 337	USA	62
L-39 Albatross	Czechoslovakia	6
SF260A	Italy	4
Transport		
AN-2 Light	Soviet Union	8
AN-26 Medium	Soviet Union	5

Helicopters		
MI-24 (attack)	Soviet Union	2
MI-8, -17	Soviet Union	19
Air Defense Guns		
14.5mm, 23mm, 37mm, 57mm, 100mm	Various	800

NAVY

Patrol Craft		
Sing Hung	North Korea	3
Zhuk	Soviet Union	3
Vedette	France	2
Minehunters and Sweepers		
K-8	Poland	42
Yevgenya	Soviet Union	72

El Salvador

Type and Description	Country of Origin	In Inventory
----------------------	-------------------	--------------

ARMY

Tanks		
AMS-13 Light	USA	12
Armored Personnel Carriers		
M-3A1	USA	5
M-113	USA	20
AML-90	France	10
UR-416	West Germany	8
M37-B1	USA	66
Field Artillery		
105 Howitzer	USA	50
105 M-101	USA	30
105 M-102	USA	6
M-56	Yugoslavia	14
155 M-114	USA	6
Mortars		
81mm	USA	300
120 UB-M52	USA	60
Recoilless Rifles		
90mm M-67	USA	400
Antiaircraft		
20mm M-55	USA	24

AIR FORCE

Fixed Wing Aircraft		
Arava transport	Israel	25
AC-47 Skytrain Gunship	USA	7
Beech AT11 T-34	USA	2
C-123	USA	2
Cessna 337 O-2A Super Skymaster	USA	9
Cessna T-41	USA	7
Cessna A37B Dragonfly light attack jet	USA	10
C-47D transport	USA	6
MD-450 Ouragan fighter-bomber (Obsolete)	USA	8
DC-6B transport	France	1
Fairchild Hiller FH-1100	USA	1
Fouga CM-170 Magister fighter (Obsolete)	France	6
Helicopters		
Aerospatiale SA-315 Lama	Italy	3
Alouette-3 transport	France	3
Bell UH1-M Iroquois Gunship	USA	14
Bell UH1-H Iroquois transport	USA	40
Hughes 500D gunship	USA	9

NAVY

Patrol Craft		
31m GC-6 Camcraft	USA	3
20m Sewart	USA	1
20m Swiftship	USA	1
26m Swiftship (Libertad)	USA	1
32m Craft	USA	3
13m Coast Guard Utility	USA	2
11m Craft	USA	4
11m Latana	USA	11
8m River Patrol	USA	6

Sources: International Institute for Strategic Studies and *Jane's Fighting Ships*, 1993-94.

**APPENDIX B. MILITARY EXPENDITURES, ARMED FORCES, GNP,
CENTRAL GOVERNMENT EXPENDITURES AND POPULATION, 1985-1995
BY COUNTRY AND REGION.**

NICARAGUA

Year	Military Expenditures (ME)		Armed	Gross National Product (GNP)		Government Expenditures (GE)	People	ME GNP	ME GE	ME per Capita	Armed Forces per 1000 people	GNP per Capita
	Millions of Dollars		Forces	Millions of Dollars		Millions of Dollars	Millions	%	%	Constant 1995	Soldiers	Constant 1995
	Current	Constant 1995	1000s	Current	Constant 1995	Constant 1995						
1985	220	301	74	1264	1732	1150	3.2	17.4%	26.2%	94	23.1	541
1986	NA	NA	75	1291	1723	988	3.2	NA	NA	NA	23.4	538
1987	NA	NA	80	1349	1745	NA	3.3	NA	NA	NA	24.2	529
1988	NA	NA	74	1217	1519	808	3.4	NA	NA	NA	21.8	447
1989	NA	NA	65	1158	1388	56	3.5	NA	NA	NA	18.6	397
1990	198	228	28	1262	1450	793	3.6	15.7%	28.8%	63	7.8	403
1991	45	49	20	1172	1295	493	3.7	3.8%	9.9%	13	5.4	350
1992	38	41	15	1231	1324	547	3.8	3.1%	7.5%	11	3.9	348
1993	34	36	15	1308	1371	535	3.9	2.6%	6.7%	9	3.8	352
1994	33	34	14	1268	1300	605	4	2.6%	5.6%	9	3.5	325
1995	34	34	14	1576	1576	654	4.2	2.2%	5.2%	8	3.3	375

HONDURAS

Year	Military Expenditures (ME)		Armed	Gross National Product (GNP)		Government Expenditures (GE)	People	ME GNP %	ME GE %	ME per Capita	Armed Forces per 1000 people	GNP per Capita
	Millions of Dollars		Forces	Millions of Dollars		Millions of Dollars	Millions			Constant 1995	Soldiers	Constant 1995
	Current	Constant 1995	1000s	Current	Constant 1995	Constant 1995						
1985	30	41	6	1932	2648	542	5.5	1.5%	7.6%	7	1.1	481
1986	NA	NA	8	1987	2652	470	5.6	NA	NA	NA	1.4	474
1987	42	54	8	2028	2625	509	5.7	2.1%	10.6%	9	1.4	461
1988	42	52	8	2102	2624	402	5.8	2.0%	12.9%	9	1.4	452
1989	40	48	9	2230	2672	390	5.9	1.8%	12.3%	8	1.5	453
1990	39	45	8	2325	2672	326	6.1	1.7%	13.8%	7	1.3	438
1991	36	40	8	2346	2592	262	6.2	1.5%	15.3%	6	1.3	418
1992	33	36	8	2058	2213	244	6.3	1.6%	14.8%	6	1.3	351
1993	39	40	8	2054	2153	201	6.4	1.9%	19.9%	6	1.3	336
1994	44	45	8	1878	1925	149	6.5	2.3%	30.2%	7	1.2	296
1995	59	59	8	2011	2011	274	6.6	2.9%	21.5%	9	1.2	305

GUATEMALA

Year	Military Expenditures (ME)		Armed	Gross National Product (GNP)		Government Expenditures (GE)	People	ME GNP %	ME GE %	ME per Capita	Armed Forces	GNP per Capita Constant 1995
	Millions of Dollars		Forces	Millions of Dollars		Millions of Dollars	Millions			per 1000 people		
	Current	Constant 1995	1000s	Current	Constant 1995	Constant 1995	Constant 1995			Soldiers		
1985	130	178	43	7896	10820	1049	8.4	1.6%	17.0%	21	5.1	1288
1986	100	133	43	8010	10690	1081	8.6	1.2%	12.3%	15	5.0	1243
1987	154	200	43	8604	11140	1281	8.8	1.8%	15.6%	23	4.9	1266
1988	156	195	43	9293	11600	1450	9.1	1.7%	13.4%	21	4.7	1275
1989	160	192	43	10080	12080	1634	9.4	1.6%	11.8%	20	4.6	1285
1990	162	186	43	10780	12390	1180	9.6	1.5%	15.8%	19	4.5	1291
1991	167	185	43	11740	12970	1134	9.9	1.4%	16.3%	19	4.3	1310
1992	187	201	44	12690	13650	1326	10.2	1.5%	15.2%	20	4.3	1338
1993	173	181	44	12670	13220	1399	10.4	1.4%	12.9%	17	4.2	1271
1994	182	187	34	13470	13810	1265	10.7	1.4%	14.8%	17	3.2	1291
1995	191	191	36	14710	14710	1347	11	1.3%	14.2%	17	3.3	1337

Source: US Arms Control and Disarmament Agency.

EL SALVADOR

Year	Military Expenditures (ME)		Armed Forces 1000s	Gross National Product (GNP)		Government Expenditures (GE)	People Millions	ME GNP %	ME GE %	ME per Capita	Armed Forces per 1000 people	GNP per Capita
	Millions of Dollars			Millions of Dollars								
	Current	Constant 1995		Current	Constant 1995	Constant 1995				Soldiers	Constant 1995	
1985	258	353	48	4532	6211	1216	4.7	5.7%	29.0%	75	10.2	1321
1986	258	344	48	4645	6200	976	4.8	5.5%	35.2%	72	10.0	1292
1987	255	331	49	4916	6362	933	4.9	5.2%	35.5%	68	10.0	1298
1988	232	289	45	5194	6485	829	5	4.5%	34.9%	58	9.0	1297
1989	249	299	45	5458	6552	797	5.1	4.6%	37.5%	59	8.8	1285
1990	223	256	55	6016	6914	751	5.2	3.7%	34.1%	49	10.6	1330
1991	213	235	60	6484	7165	902	5.3	3.3%	26.1%	44	11.3	1352
1992	143	154	49	7239	7787	1192	5.4	2.0%	12.9%	29	9.1	1442
1993	117	123	49	7979	8365	1182	5.5	1.5%	10.4%	22	8.9	1521
1994	113	116	30	8690	8908	1260	5.6	1.3%	9.2%	21	5.4	1591
1995	101	101	22	9564	9564	1358	5.7	1.1%	7.4%	18	3.9	1678

CENTRAL AMERICA AND THE CARIBBEAN

Year	Military Expenditures (ME)		Armed Forces 1000s	Gross National Product (GNP)		Government Expenditures (GE)	People Millions	ME GNP %	ME GE %	ME per Capita	Armed Forces per 1000 people	GNP per Capita
	Billion of Dollars			Billions of Dollars								
	Current	Constant 1995		Current	Constant 1995	Constant 1995				Soldiers	Constant 1995	
1985	2.3	3.2	537	68	93	30	51.2	3.4%	10.7%	63	10.5	1816
1986	2.3	3.1	538	71	95	32	52.3	3.3%	9.7%	59	10.3	1816
1987	2.3	3	544	76	98	28	53.3	3.1%	10.7%	56	10.2	1839
1988	2.3	2.8	531	78	98	28	54.3	2.9%	10.0%	52	9.8	1805
1989	2.4	2.8	527	82	99	27	55.4	2.8%	10.4%	51	9.5	1787
1990	2.4	2.7	495	83	96	27	56.6	2.8%	10.0%	48	8.7	1696
1991	1.9	2.2	492	81	89	23	57.7	2.5%	9.6%	38	8.5	1542
1992	1.6	1.7	356	81	87	22	58.8	2.0%	7.7%	29	6.1	1480
1993	1.4	1.5	356	82	86	21	59.9	1.7%	7.1%	25	5.9	1436
1994	1.5	1.5	283	87	89	22	61	1.7%	6.8%	25	4.6	1459
1995	1.2	1.2	209	92	92	23	62.1	1.3%	5.2%	19	3.4	1481

Source: US Arms Control and Disarmament Agency, Washington.

Arms Transfer Deliveries and Total Trade, 1985-1995 by Region and Country.

NICARAGUA

YEAR	ARMS IMPORTS (Millions of Dollars)		ARMS EXPORTS (Millions of Dollars)		TOTAL IMPORTS (Millions of Dollars)		TOTAL EXPORTS (Millions of Dollars)		ARMS IMPORTS TOTAL IMPORTS		ARMS EXPORTS TOTAL EXPORTS	
	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	%	%	%	%
1985	280	384	0	0	964	1321	302	414	29.1%	0.0%	0.0%	0.0%
1986	600	801	0	0	857	1144	247	330	70.0%	0.0%	0.0%	0.0%
1987	525	680	0	0	827	1070	273	353	63.6%	0.0%	0.0%	0.0%
1988	650	812	0	0	805	1005	233	291	80.8%	0.0%	0.0%	0.0%
1989	340	407	0	0	615	737	311	373	55.2%	0.0%	0.0%	0.0%
1990	70	80	0	0	638	733	331	380	10.9%	0.0%	0.0%	0.0%
1991	80	88	0	0	751	830	272	301	10.6%	0.0%	0.0%	0.0%
1992	5	5	30	32	855	920	223	240	0.5%	13.3%	0.0%	0.0%
1993	5	5	0	0	746	782	267	280	0.6%	0.0%	0.0%	0.0%
1994	0	0	0	0	875	897	351	360	0.0%	0.0%	0.0%	0.0%
1995	0	0	40	40	962	962	520	520	0.0%	7.7%	0.0%	0.0%

HONDURAS

YEAR	ARMS IMPORTS (Millions of Dollars)		ARMS EXPORTS (Millions of Dollars)		TOTAL IMPORTS (Millions of Dollars)		TOTAL EXPORTS (Millions of Dollars)		ARMS IMPORTS TOTAL IMPORTS		ARMS EXPORTS TOTAL EXPORTS	
	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	%	%	%	%
1985	30	41	0	0	888	1217	780	1069	3.4%	0.0%	0.0%	0.0%
1986	100	133	0	0	875	1169	854	1140	11.4%	0.0%	0.0%	0.0%
1987	80	104	0	0	827	1070	791	1024	9.7%	0.0%	0.0%	0.0%
1988	60	75	0	0	886	1106	840	1049	6.8%	0.0%	0.0%	0.0%
1989	50	60	0	0	969	1161	859	1029	5.2%	0.0%	0.0%	0.0%
1990	30	34	0	0	935	1075	831	955	3.2%	0.0%	0.0%	0.0%
1991	30	33	0	0	955	1055	792	875	3.1%	0.0%	0.0%	0.0%
1992	30	32	0	0	1037	1115	802	863	2.9%	0.0%	0.0%	0.0%
1993	20	21	0	0	1130	1185	814	853	1.8%	0.0%	0.0%	0.0%
1994	10	10	0	0	1056	1082	843	864	0.9%	0.0%	0.0%	0.0%
1995	10	10	0	0	1219	1219	1061	1061	0.8%	0.0%	0.0%	0.0%

Source: US Arms Control and Disarmament Agency.

GUATEMALA

YEAR	ARMS IMPORTS (Millions of Dollars)		ARMS EXPORTS (Millions of Dollars)		TOTAL IMPORTS (Millions of Dollars)		TOTAL EXPORTS (Millions of Dollars)		ARMS IMPORTS TOTAL IMPORTS		ARMS EXPORTS TOTAL EXPORTS	
	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	%	%	%	%
1985	30	41	0	0	1175	1610	1057	1449	2.5%	2.5%	0.0%	0.0%
1986	5	7	0	0	959	1280	1044	1393	0.5%	0.5%	0.0%	0.0%
1987	5	6	0	0	1447	1873	987	1278	0.3%	0.3%	0.0%	0.0%
1988	10	12	0	0	1557	1944	1022	1276	0.6%	0.6%	0.0%	0.0%
1989	20	24	0	0	1654	1982	1108	1328	1.2%	1.2%	0.0%	0.0%
1990	20	23	0	0	1649	1895	1163	1337	1.2%	1.2%	0.0%	0.0%
1991	10	11	0	0	1851	2045	1202	1328	0.5%	0.5%	0.0%	0.0%
1992	0	0	0	0	2532	2724	1295	1393	0.0%	0.0%	0.0%	0.0%
1993	5	5	0	0	2599	2725	1340	1405	0.2%	0.2%	0.0%	0.0%
1994	5	5	0	0	2604	2669	1522	1560	0.2%	0.2%	0.0%	0.0%
1995	5	5	0	0	3293	3293	2156	2156	0.2%	0.2%	0.0%	0.0%

EL SALVADOR

YEAR	ARMS IMPORTS (Millions of Dollars)		ARMS EXPORTS (Millions of Dollars)		TOTAL IMPORTS (Millions of Dollars)		TOTAL EXPORTS (Millions of Dollars)		ARMS IMPORTS TOTAL IMPORTS		ARMS EXPORTS TOTAL EXPORTS	
	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	%	%	%	%
1985	120	164	0	0	961	1317	679	931	12.5%	12.5%	0.0%	0.0%
1986	110	147	0	0	935	1248	755	1008	11.8%	11.8%	0.0%	0.0%
1987	80	104	0	0	994	1287	591	765	8.1%	8.1%	0.0%	0.0%
1988	100	125	0	0	1007	1257	6009	760	9.9%	9.9%	0.0%	0.0%
1989	100	120	0	0	1161	1391	498	597	8.6%	8.6%	0.0%	0.0%
1990	90	103	0	0	1263	1452	582	669	7.1%	7.1%	0.0%	0.0%
1991	60	66	0	0	1406	1554	588	650	4.2%	4.2%	0.0%	0.0%
1992	70	75	0	0	1699	1828	598	643	4.1%	4.1%	0.0%	0.0%
1993	40	42	0	0	1912	2004	732	767	2.1%	2.1%	0.0%	0.0%
1994	30	31	0	0	2249	2305	844	865	1.3%	1.3%	0.0%	0.0%
1995	20	20	0	0	2853	2853	998	998	0.7%	0.7%	0.0%	0.0%

Source: US Arms Control and Disarmament Agency.

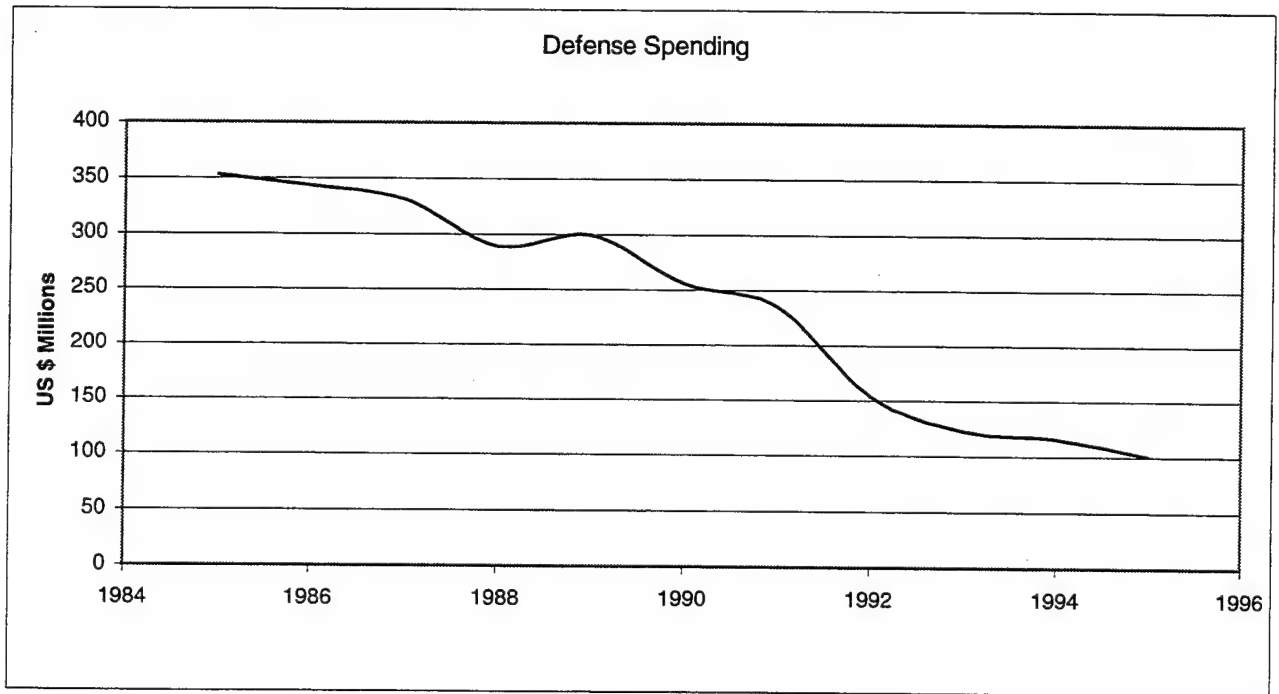
CENTRAL AMERICA AND CARIBBEAN

YEAR	ARMS IMPORTS (Millions of Dollars)		ARMS EXPORTS (Millions of Dollars)		TOTAL IMPORTS (Millions of Dollars)		TOTAL EXPORTS (Millions of Dollars)		ARMS IMPORTS TOTAL IMPORTS %	ARMS EXPORTS TOTAL EXPORTS %
	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995	Current	Constant 1995		
1985	2920	4002	5	7	20600	28230	14710	20160	14.2%	0.0%
1986	2450	3270	0	0	19980	26670	14050	18750	12.3%	0.0%
1987	2530	3275	0	0	19750	25570	12890	16690	12.8%	0.0%
1988	2555	3190	230	287	19510	24360	13330	16650	13.1%	1.7%
1989	1740	2085	5	6	21750	26070	13770	16500	8.0%	0.0%
1990	1620	1862	0	0	21660	24900	14170	16280	7.5%	0.0%
1991	725	801	0	0	19260	21280	11960	13210	3.8%	0.0%
1992	220	237	40	43	19580	21060	10940	11770	1.1%	0.4%
1993	180	189	5	5	20630	21630	10460	10970	0.9%	0.0%
1994	70	72	0	0	21150	21690	11760	12050	0.3%	0.0%
1995	45	45	40	40	25700	25700	14670	14670	0.2%	0.3%

Source: US Arms Control and Disarmament Agency.

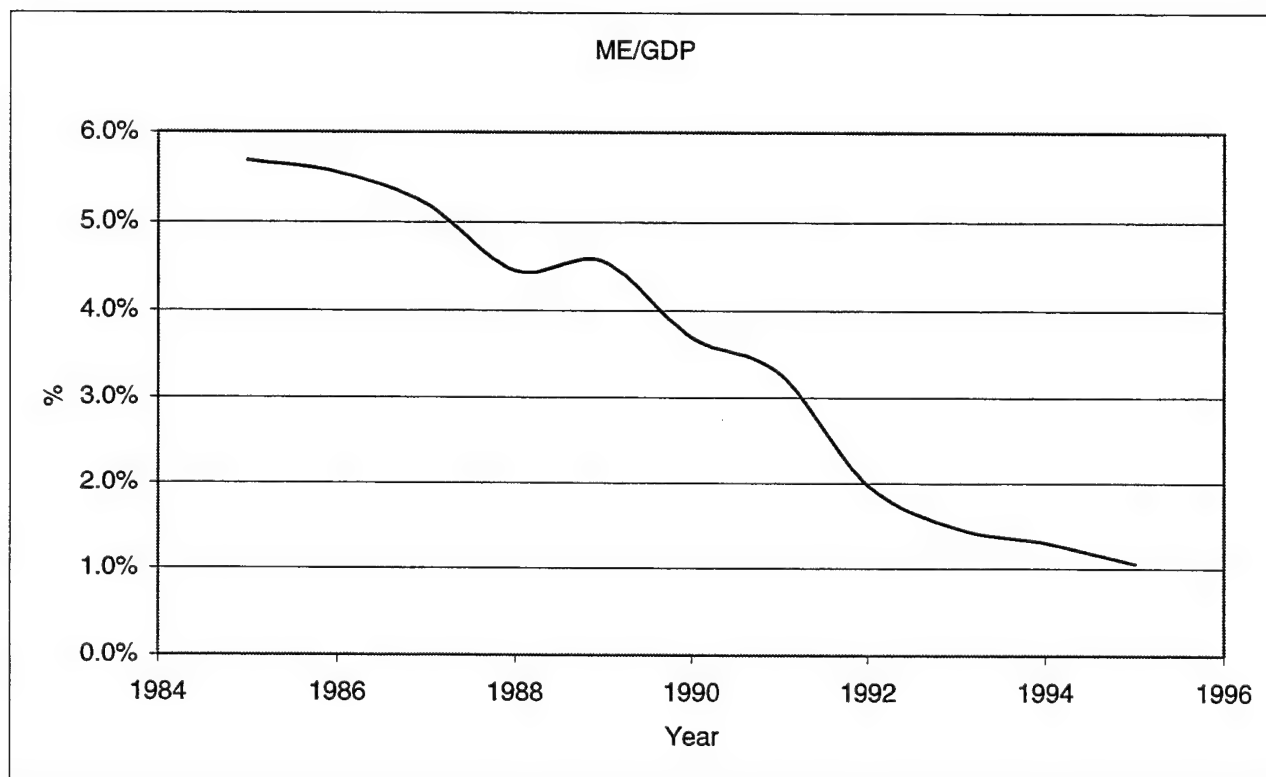
APPENDIX C. EL SALVADOR DEFENSE EXPENDITURES

El Salvador Defense Spending, 1985-1995, (constant 1995 US dollars).



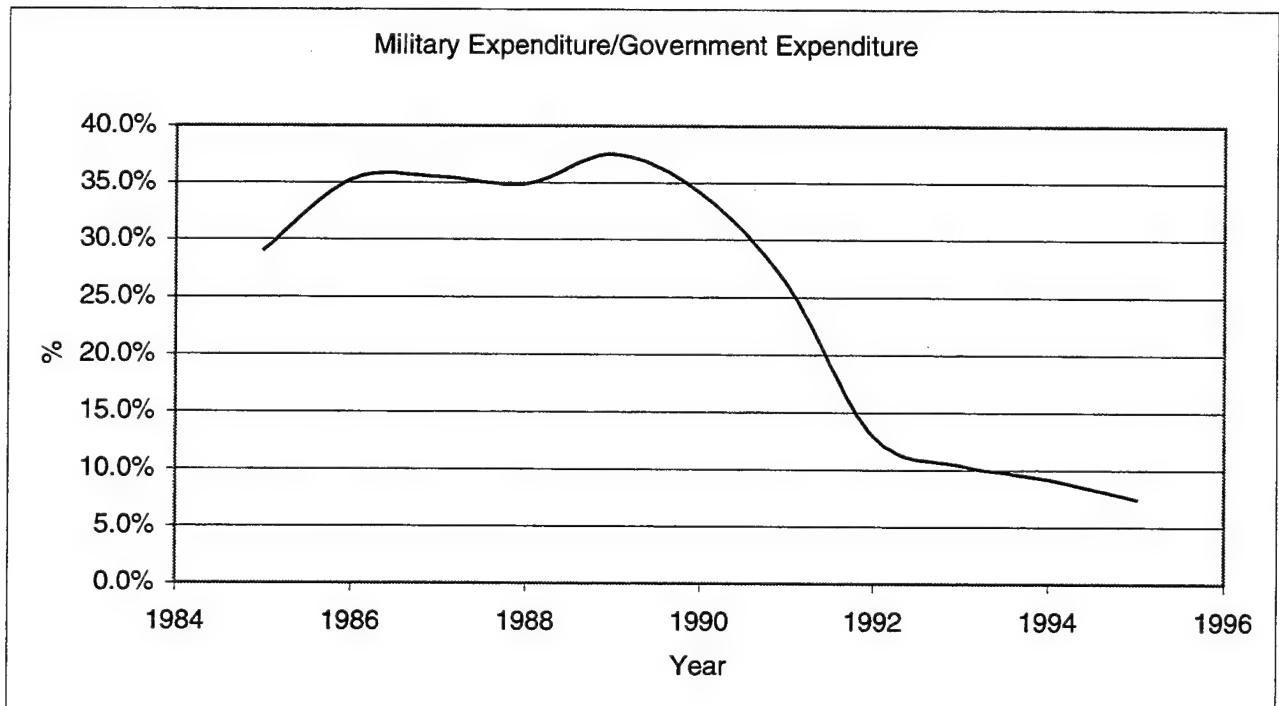
Source: US Arms Control and Disarmament Agency.

El Salvador Military Expenditures as percentage of Gross Domestic Product 1985-1995



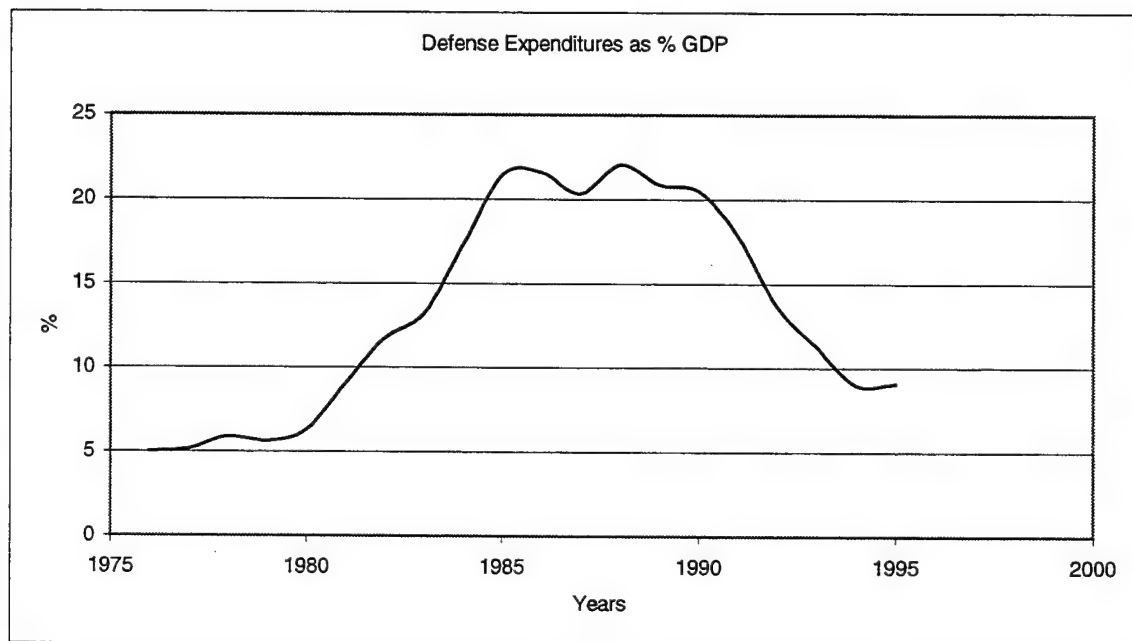
Source: US Arms Control and Disarmament Agency.

**El Salvador Military Expenditures as percentage of Government Expenditures
1985-1995**



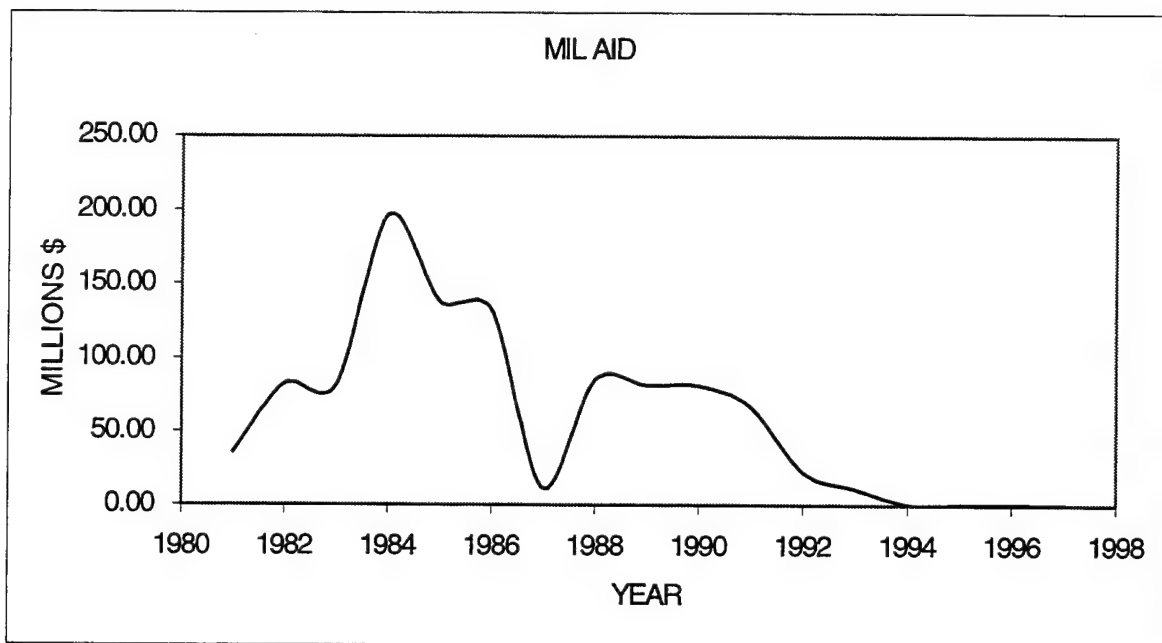
Source: US Arms Control and Disarmament Agency.

El Salvador Defense Expenditures as Percentage of Gross Domestic Product 1975-1995



Source: The Library of the US Congress.

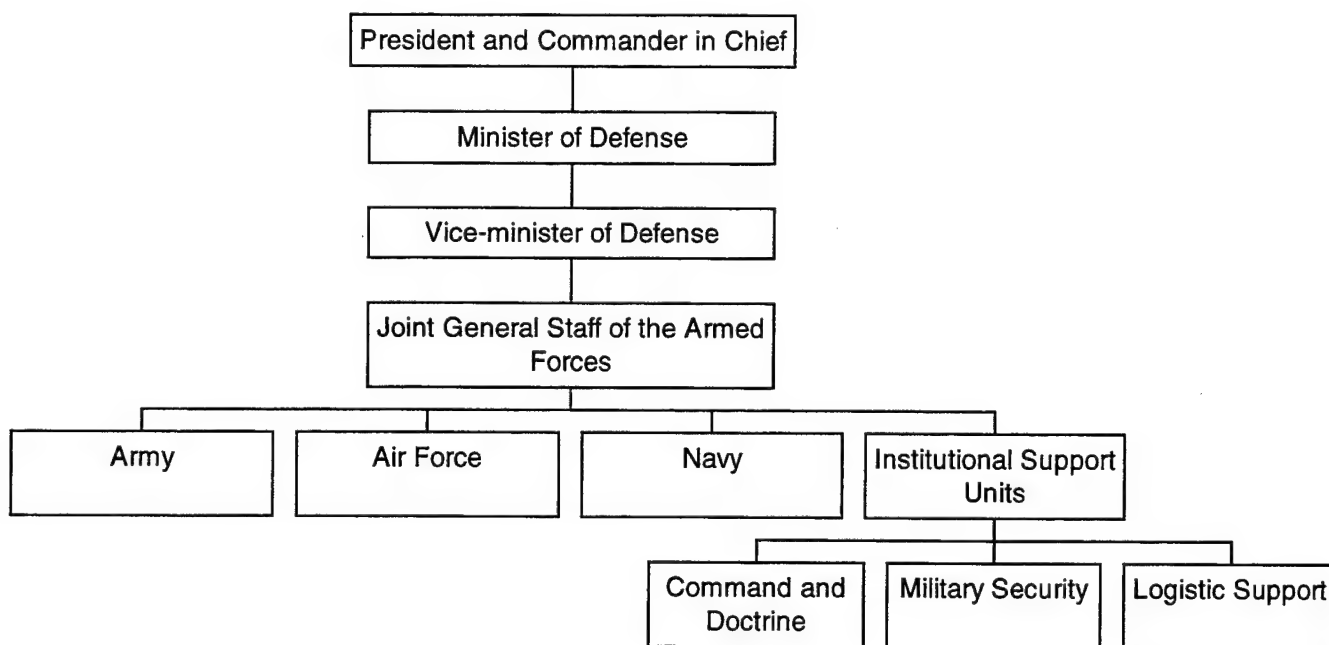
Foreign Military Assistance to El Salvador, 1981-1995



Source: Center for International Policy and The Library of the US Congress.

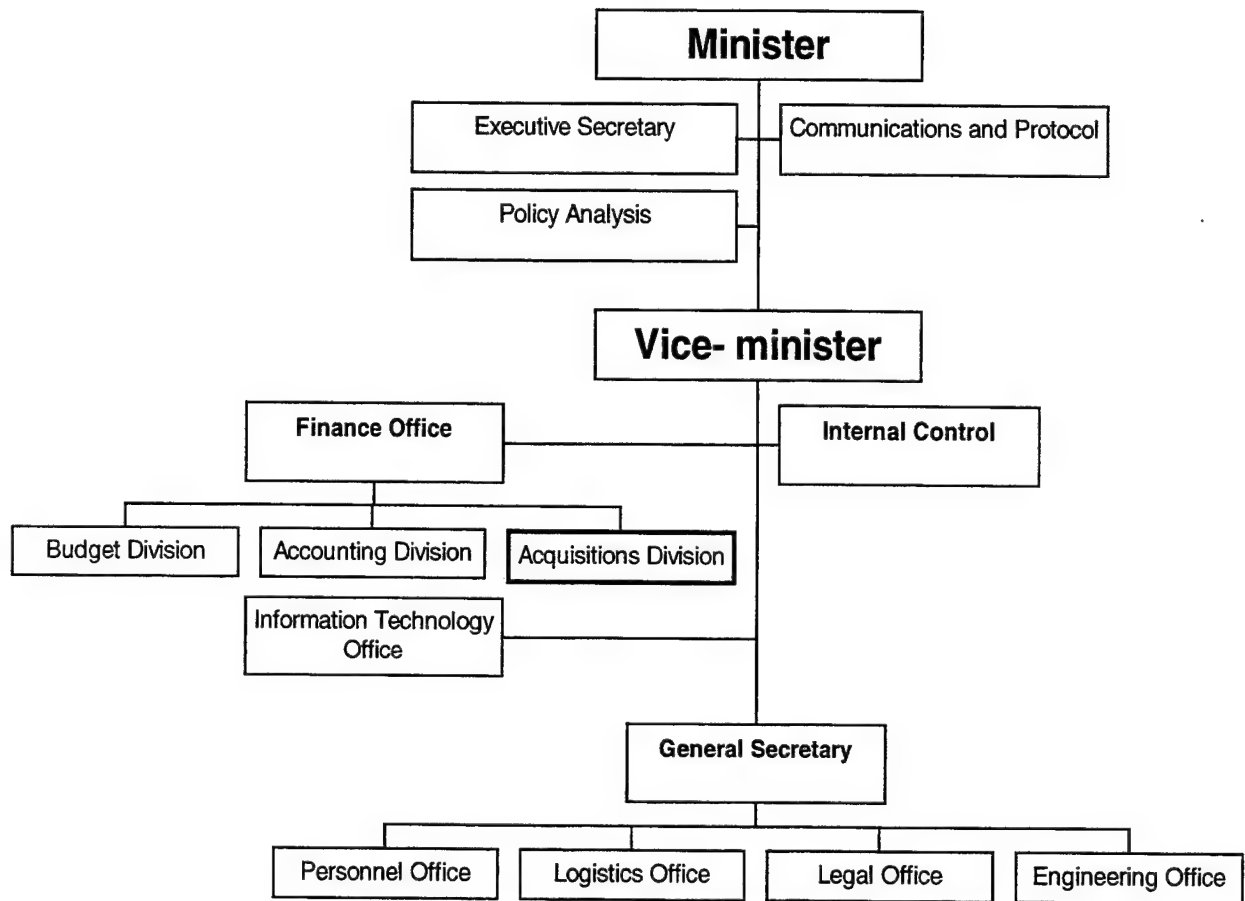
**APPENDIX D. ORGANIZATIONAL CHART OF THE ARMED FORCES OF EL
SALVADOR AND THE MINISTRY OF DEFENSE**

Organizational Chart of the Armed Forces



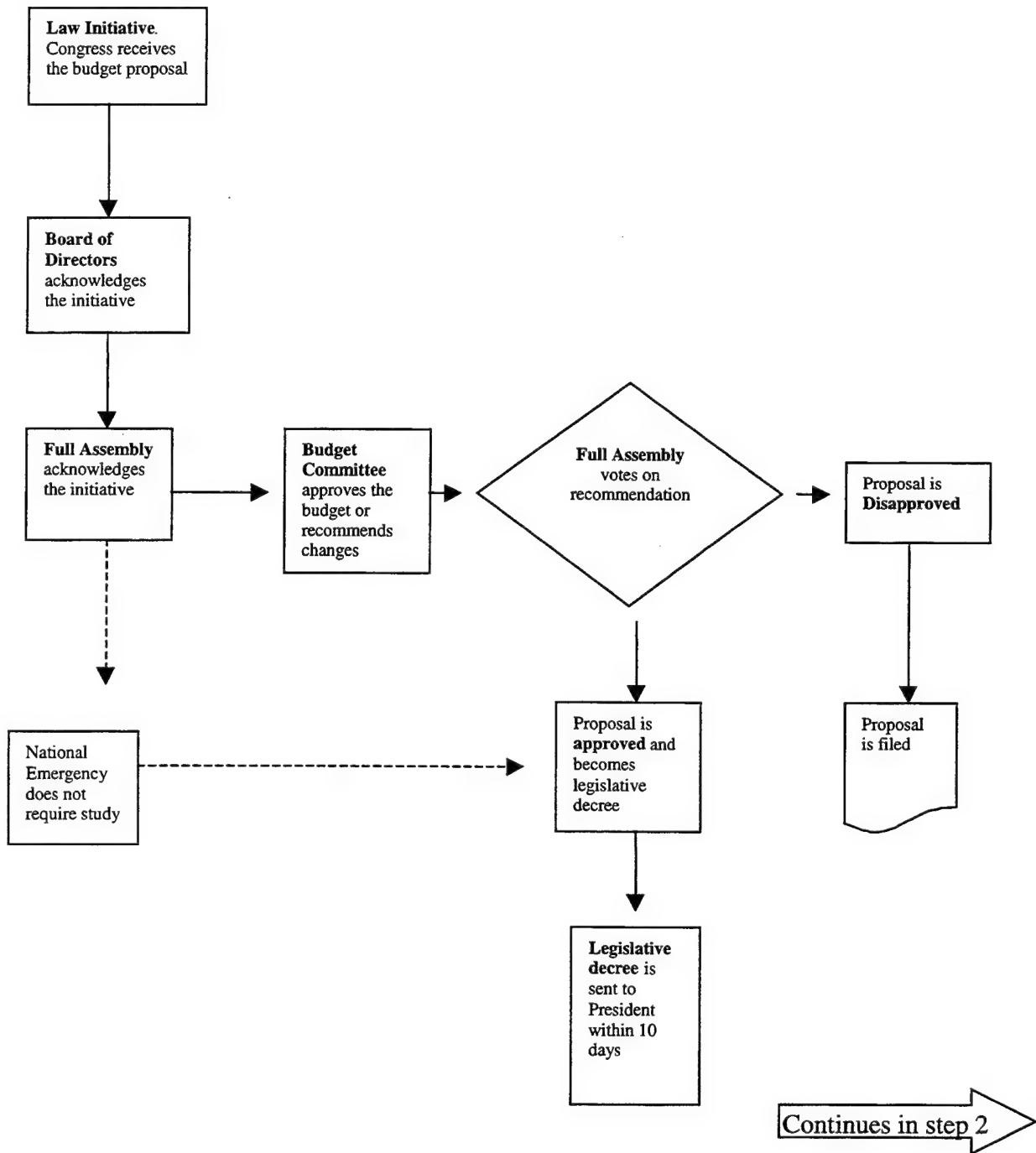
Source: Ley Organica de la Fuerza Armada de El Salvador.

Organization Chart of the Ministry of Defense

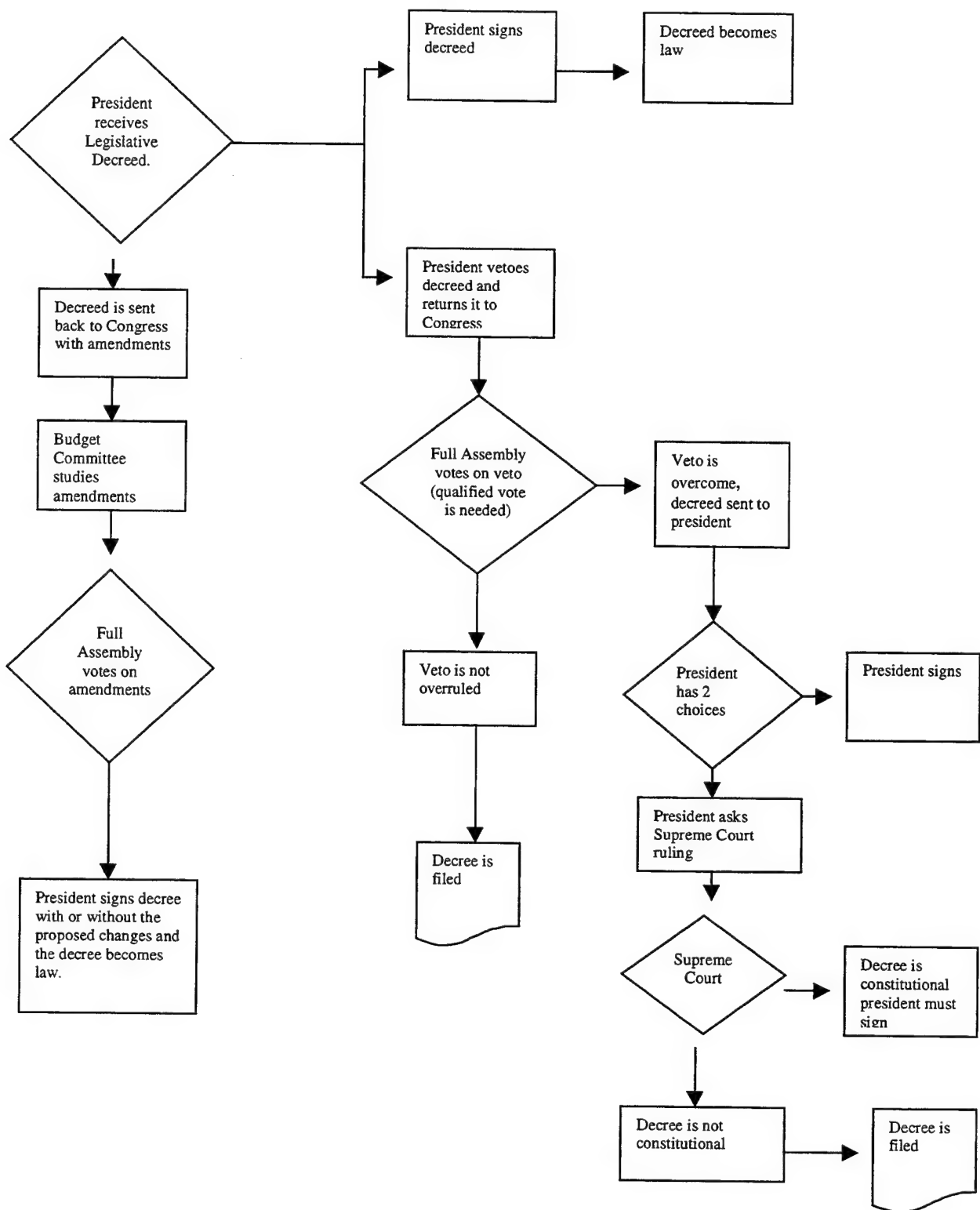


Source: Ley Organica de la Fuerza Armada de El Salvador.

APPENDIX E. THE CONGRESSIONAL BUDGETARY PROCESS



Source: Asamblea Nacional Legislativa de la Republica de El Salvador.



**APPENDIX F. SUMMARY OF THE UNITED STATES DEPARTMENT OF
DEFENSE ACQUISITION PROCESS**

Milestone 0 – Concept Studies Approval	
Objectives:	<ul style="list-style-type: none"> • Determine if mission need warrants further study. • Identify minimum number of study alternatives.
Decision Criteria:	<ul style="list-style-type: none"> • Based on validated projected threat. • Non-materiel solution is unsatisfactory. • Important enough to fund study.
Acquisition Decision Memorandum:	<ul style="list-style-type: none"> • Minimum number of alternatives. • Identify lead organization. • Establish exit criteria. • Identify funding.

Phase 0 – Concept Exploration and Definition	
Objectives:	<ul style="list-style-type: none"> • Evaluate various alternatives. • Define most promising concepts. • Develop supporting analyses, including risk and risk management. • Develop acquisition strategy and objectives.
Minimum Required Accomplishments:	<ul style="list-style-type: none"> • Validated threat assessment. • Identify environmental consequences. • Pros and cons of each alternative. • Proposed acquisition strategy. • Accomplish exit criteria.

Milestone I – Concept Demonstration Approval	
Objectives:	<ul style="list-style-type: none"> • Determine if Phase 0 results warrant starting a new acquisition program. • Establish the concept baseline.
Decision Criteria:	<ul style="list-style-type: none"> • Validated threat and performance. • Environmental consequences. • Affordable life cycle costs.
Acquisition Decision Memorandum:	<ul style="list-style-type: none"> • Approve new program start. • Approve concept baseline and strategy. • Establish exit criteria. • Identify affordability constraints.
Phase I – Demonstration and Validation	
Objectives:	<ul style="list-style-type: none"> • Better define design and capabilities. • Demonstrate critical technologies. • Prove critical processes are attainable • Develop supporting analyses for a Milestone II decision.
Minimum Required Accomplishments:	<ul style="list-style-type: none"> • Validated threat assessment. • Identify environmental consequences. • Identify trade-off opportunities. • Proposed development baseline. • Refine acquisition strategy. • Assess defense industrial base. • Program adequate resources. • Accomplish exit criteria.

Milestone II – Development Approval	
Objectives:	<ul style="list-style-type: none"> • Determine if Phase I results warrant continuation. • Establish the development baseline.
Decision Criteria:	<ul style="list-style-type: none"> • Validated threat and performance. • Technologies are achievable. • Environmental consequences. • Affordable life cycle costs. • Adequate resources available.
Acquisition Decision Memorandum:	<ul style="list-style-type: none"> • Approve entry into Phase II. • Approve development baseline. • Establish exit criteria. • Identify Low Rate Initial Production quantities.

Phase II – Engineering and Manufacturing Development	
Objectives:	<ul style="list-style-type: none"> • Develop stable design. • Validate manufacturing/production processes. • Test system capabilities against mission need and specification requirements.
Minimum Required Accomplishments:	<ul style="list-style-type: none"> • Validated threat assessment. • Identify environmental consequences. • Realistic test results. • Production and configuration baselines. • Refine acquisition strategy. • Assess defense industrial baseline. • Program adequate resources. • Accomplish exit criteria.

Milestone III – Production Approval	
Objectives:	<ul style="list-style-type: none"> • Determine if Phase II results warrant continuation. • Establish the production baseline.
Decision Criteria:	<ul style="list-style-type: none"> • Validated threat and performance. • Reasonable test and producibility results. • Environmental consequences. • Affordable life cycle costs. • Adequate resources available.
Acquisition Decision Memorandum:	<ul style="list-style-type: none"> • Approve entry into Phase III. • Approve production baseline. • Establish exit criteria, if appropriate.

Phase III – Production and Development	
Objectives:	<ul style="list-style-type: none"> • Establish production and support base. • Achieve operational capability meeting user's need. • Conduct follow-on operational and production verification testing.
Minimum Required Accomplishments:	<ul style="list-style-type: none"> • Update configuration baselines. • Update/validate threat assessment. • Refine cost information. • Execute operational/support plans. • Identify operational/support problems.

Milestone IV – Major Modifications Approval (As required)	
Objectives:	<ul style="list-style-type: none"> • Determine if major modifications to a system in production are warranted. • Establish the appropriate baseline.
Decision Criteria:	<ul style="list-style-type: none"> • Validated threat and performance. • Field experience supports need. • Technologies achievable. • Environmental consequences. • Affordable life cycle costs. • Adequate resources available.
Acquisition Decision Memorandum:	<ul style="list-style-type: none"> • Define phase to enter. • Approve appropriate baseline. • Establish exit criteria.

Phase IV – Operations and Support	
Objectives:	<ul style="list-style-type: none"> • Ensure fielded system meets mission needs. • Identify deficiencies/shortcomings to correct or improve performance.
Minimum Required Accomplishments:	<ul style="list-style-type: none"> • Update configuration baselines. • Attain and maintain required performance. • Conduct service life extensions.

Source: J. S. Przemieniecki, 1993

APPENDIX G. PRINCIPLES THAT GUIDE DEFENSE ACQUISITIONS IN THE UNITED STATES

- Translating operational needs into stable, affordable programs. This principle is based on the following nine principles.
 - ◆ Integrated management framework.
 - ◆ Integrated product and process development.
 - ◆ Program stability.
 - ◆ Risk assessment and management.
 - ◆ Total systems approach.
 - ◆ Cost as an independent variable.
 - ◆ Program objectives and thresholds.
 - ◆ Non-traditional acquisition.
 - ◆ Performance specification.
- Acquiring quality products. This principle is supported by the following 12 elements.
 - ◆ Event oriented management.
 - ◆ Hierarchy of material alternatives.
 - ◆ Communication with users.
 - ◆ Competition.
 - ◆ Test and evaluation.
 - ◆ Modeling and simulation.
 - ◆ Independent assessment.

- ♦ Innovative practices.
- ♦ Continuous improvement.
- ♦ Legality of weapons under international law.
- ♦ Software intensive systems.
- ♦ Environmental management.
- Organizing for efficiency and effectiveness. This principle is based on the following principles.
 - ♦ Streamlined organizations
 - ♦ Acquisition corps.
 - ♦ Teamwork.
 - ♦ Limited reporting requirements.
 - ♦ Tailoring.
 - ♦ Automated acquisition information.
 - ♦ Management control.

Source: DoD Directive 5000.1 "Defense Acquisition."

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